

Attachment A:
Monroe Energy's Response to April 11, 2016 Meeting

Monroe Energy, LLC's Trainer Refinery (the "Refinery") is planning to install a new Ultra Low Sulfur Gasoline (ULSG) unit to comply with EPA's Tier 3 Motor Vehicle Emission and Fuel Standard, which requires the Refinery meet a 10 ppm standard of sulfur in gasoline by January 1, 2017.

On September 14, 2015, the Refinery submitted a Plan Approval Application for the ULSG Project to the Pennsylvania Department of Environmental Protection (PADEP). Refinery and PADEP personnel have met on multiple occasions to discuss the application. The most recent meeting occurred April 11, 2016, which also included EPA Region 3 personnel Ms. Gerallyn Duke and Mr. David Campbell.

Since the meeting on April 11, the Refinery has carefully considered EPA's comments, and based on the discussions of 4/11/2016, analyzed the previously submitted Plan Approval Application and determined that the proposed project was not clearly defined or explained. In addition, in consideration of EPA guidance, the Refinery has concluded that some of the calculations presented in the emissions inventory tables were not performed in accordance with the Prevention of Significant Deterioration (PSD) regulations cited at 40 CFR 52.21 and adopted in entirety at Subchapter D of Chapter 127 of the state air regulations, along with PSD guidance documents that guide project emission increase analyses. Other calculations were determined to have minor calculation errors and are corrected as a part of this Plan Approval Application Addendum.

As a result of these deficiencies, the Refinery is proposing the following edits to the September application:

- Clarification of the project description
- Revision of the Emission Inventory tables

Project Description

We believe that the Plan Approval Application can better be understood as two projects at the refinery, both involving the ULSG Unit.

1. ULSG Construction Project
2. Crude Rate Increase Project

Each of the projects is discussed below.

1. ULSG Construction Project

The Refinery is proposing to install a new ULSG unit to desulfurize gasoline-blending intermediates from 30 ppm sulfur to 10 ppm sulfur. Feed for the new ULSG unit will be comprised of existing unit outputs, comprised of 34,000 BPD of Naphtha from the FCC and

8,500 BPD of Light Straight Run (LSR) Naphtha from the Crude Units. As a part of this project, two new feed heaters, a cooling tower, and unit fugitives will be installed. In addition, the project affected sources are the:

- Sulfur Plant (Source ID 102), as sulfur production will increase by 2.39 LTPD; and
- Boilers 9 and 10 (Source IDs 34 and 35, as steam usage will increase by 5,602 lb/hr;

Using a conservative approach, the Refinery has also included the Main Flare (Source ID 103) as an affected source with an incremental increase in emissions, as new connections will be made to the Main Flare; however, the Refinery operates a Flare Gas Recovery Unit and does not expect additional emissions under normal operation from the Main Flare as a result of the new ULSG.

Emissions from the new sources are calculated on a Potential-to-Emit (PTE) basis. Affected sources are calculated based on the Projected Actual Emissions (PAE) minus the Baseline Actual Emissions (BAE), without the use of the “could have accommodated” (CHA) or excluded emissions. This revision is to incorporate EPA and PADEP’s feedback regarding the application as it relates to the ULSG portion of the project. The PAE rates reflect the increased utilization of the affected sources as a result of the ULSG unit demand as projected for the 10 years following project installation. BAE are based on the average rate, in tons per year, of any historic 24 consecutive month period during the 10 years prior to submission of a completed plan approval application for PSD and 5 years for Nonattainment New Source Review (NNSR).

2. Crude Rate Increase Project

Based on market demand and economics, the Refinery is proposing to increase crude oil throughput by up to 5,000 BPD on a short term basis, which has been annualized for emission calculations. There will be no changes to the affected units that would meet the definition of a physical change or a change in the method of operation. In addition, historical rates at the Refinery show the ability to meet this level of demand.

Emissions from the affected sources are calculated based on the Projected Actual Emissions (PAE) minus the Baseline Actual Emissions (BAE) and “Could Have Accommodated Emissions” (CHA). The PAE rates reflect the increased utilization of the affected sources as a result of the crude throughput increase. BAE are based on the average rate, in tons per year, of any historic 24 consecutive month period during the 10 years prior to submission of a completed plan approval application for PSD and 5 years for NNSR. CHA rates are calculated by annualizing the highest monthly emissions for each affected unit and pollutant within the selected baseline period for that pollutant.

Emissions Inventory Table Changes

In the September 2015 Plan Approval Application, the Refinery incorrectly applied CHA to the sources (Boilers 9, 10, SRU, and Flare) affected by the construction of the new unit, as these

sources emissions increased as a result of the demand required by the ULSG unit. As a result, the revised project emissions changes increased for those sources when compared to the September application. It was also discovered that PAE for Boilers 9 and 10 were overestimated, as the steam demand required by the project was calculated incorrectly in the September application (18,900 lb/hr vs. 5,800 lb/hr for both the ULSG and the Crude Rate Increase Project on an annual basis). This error has also been corrected. This revised tables are presented in Attachment 2.

Note that the exclusion of the CHA for the ULSG Construction Project affected sources has resulted in the need for the Refinery to purchase one (1) additional NOx credit, as the calculation shows that 49 credits are now required vs. 48 credits required in the September application.

Attachment B:
Revised Emission Inventory Tables from “Attachment C” in Plan Approval
Application

Table C-1
Monroe Energy, LLC - Trainer, PA Refinery
PSD Baseline Actual Emission Rates

Emission Unit	Emission Rate (tpy)									
	PM	PM ₁₀	PM _{2.5}	SO ₂	NOx	VOC	CO	Lead	H ₂ S	CO ₂ e ^(a)
ULSG and Crude Throughput Affected Sources										
34 Boiler 9	0.53	1.69	1.51	1.93	4.14	0.11	1.17	4.51E-04	0.06	72,956.09
35 Boiler 10	0.38	1.06	1.01	1.91	3.89	0.10	8.72	4.32E-04	0.06	83,568.14
102 SRU	0.10	0.38	0.38	19.27	5.22	0.24	3.56	2.04E-05	0.00	2,870.38
103 Main Flare	4.05	5.04	5.04	10.04	10.19	33.12	58.11	1.14E-04	14.23	51,887.23
Crude Throughput Project Affected Sources										
101 FCC Unit	43.06	63.93	56.61	46.18	297.01	3.18	15.63	2.47E-04	-	500,614.22
733 FCCU Feed Heater	0.10	0.42	0.42	0.44	1.76	0.30	0.93	3.73E-05	0.01	16,767.57
735 Kerosene/HCN HTU Feed Heater	0.22	0.36	0.36	0.39	6.41	0.26	3.23	1.82E-05	2.74E-03	4,338.50
736 Diesel HTU Heater	0.24	0.42	0.42	0.49	10.39	0.06	3.49	3.35E-05	0.01	13,861.83
741 D2/VGO Hydrotreater Feed Heater	0.43	0.33	0.33	0.64	8.01	0.44	7.44	4.78E-05	0.01	23,308.90
737 Naphtha HDS Heater	1.19	1.87	1.87	1.96	26.07	1.35	20.86	1.22E-04	0.02	33,179.83
738 Platformer Feed Heater	8.45	13.44	13.44	14.10	147.14	9.73	1.57	9.42E-04	0.19	285,379.82
739 Isocracker 1st Stage Heater	0.55	0.96	0.96	1.01	15.65	0.70	11.21	6.49E-05	0.01	14,774.84
740 Isocracker Splitter Reboiler	0.69	1.19	1.19	1.25	15.70	0.86	13.38	7.83E-05	0.01	18,461.59
742 VCD 541 VAC Heater	0.18	0.71	0.71	0.77	13.38	0.51	7.34	4.31E-05	0.01	13,852.93
743 VCD 542 VAC Heater	0.44	0.78	0.78	0.44	4.48	0.02	0.01	2.38E-05	0.01	17,847.75
746 VCD 544 VAC Heater	1.35	2.88	2.88	2.37	12.53	2.19	1.34	1.40E-04	0.02	35,617.21
744 ACD 543 Crude Heater	4.32	7.22	7.22	7.89	28.30	5.23	81.32	4.82E-04	0.09	144,479.38
745 ACD 544 Crude Heater	4.68	7.59	7.59	8.29	32.82	5.49	83.63	4.91E-04	0.09	146,023.81
165 Tank 93	-	-	-	-	-	2.46	-	-	-	-
166 Tank 94	-	-	-	-	-	1.61	-	-	-	-
126 Tank 95	-	-	-	-	-	2.13	-	-	-	-
127 Tank 96	-	-	-	-	-	3.27	-	-	-	-
137 Tank 152	-	-	-	-	-	1.38	-	-	-	-
138 Tank 153	-	-	-	-	-	0.15	-	-	-	-
140 Tank 155	-	-	-	-	-	0.13	-	-	-	-
142 Tank 157	-	-	-	-	-	0.15	-	-	-	-
300 Tank 158 (Source ID 193)	-	-	-	-	-	3.50	-	-	-	-
143 Tank 159	-	-	-	-	-	3.32	-	-	-	-
194 Tank 160	-	-	-	-	-	4.86	-	-	-	-
144 Tank 161	-	-	-	-	-	2.70	-	-	-	-
145 Tank 162	-	-	-	-	-	0.87	-	-	-	-
146 Tank 163	-	-	-	-	-	1.60	-	-	-	-
147 Tank 164	-	-	-	-	-	2.53	-	-	-	-
148 Tank 165	-	-	-	-	-	3.09	-	-	-	-
149 Tank 166	-	-	-	-	-	2.16	-	-	-	-
150 Tank 168	-	-	-	-	-	1.53	-	-	-	-
152 Tank 170	-	-	-	-	-	3.02	-	-	-	-
155 Tank 174	-	-	-	-	-	4.09	-	-	-	-
156 Tank 175	-	-	-	-	-	5.35	-	-	-	-
157 Tank 178	-	-	-	-	-	4.53	-	-	-	-
160 Tank 181	-	-	-	-	-	3.03	-	-	-	-
161 Tank 182	-	-	-	-	-	6.52	-	-	-	-
163 Tank 185	-	-	-	-	-	7.02	-	-	-	-
164 Tank 186	-	-	-	-	-	4.75	-	-	-	-
Total Baseline Emissions (tons/24 months)	141.92	220.54	205.42	238.75	1,286.16	279.26	645.90	7.58E-03	29.70	2,959,534.50
Total Baseline Actual Emissions	70.96	110.27	102.71	119.38	643.08	139.63	322.95	3.79E-03	14.85	1,479,767.25
Baseline Period	Aug-13	Aug-13	Aug-13	Aug-13	Aug-13	Aug-13	Jan-13	Nov-12	Jan-09	Jun-09
	Jul-15	Jul-15	Jul-15	Jul-15	Jul-15	Jul-15	Dec-14	Oct-14	Dec-10	May-11

^(a) CO₂e is carbon dioxide equivalent, calculated according to 40 CFR 98 Equation A-1:

$$CO_2e = \sum_{i=1}^n GHG_i \times GWP_i$$

where GHG_i = annual mass emissions of greenhouse gas i (short tons/year)
 GWP_i = global warming potential of greenhouse gas i from the table below

Pollutant	GWP (100 year)
CO ₂	1
N ₂ O	298
CH ₄	25

*and (higher)
baseline period*

Table C-2
Monroe Energy, LLC - Trainer, PA Refinery
NNSR Baseline Actual Emission Rates

Emission Unit		Emission Rate (tpy)				
		PM _{2.5} NNSR			Ozone NNSR	
		PM _{2.5}	SO ₂	NO _x	NO _x	VOC
ULSG Affected Sources						
34	Boiler 9	1.51	1.93	4.14	4.14	0.11
35	Boiler 10	1.01	1.91	3.89	3.89	0.10
102	SRU	0.38	19.27	5.22	5.22	0.24
103	Main Flare	5.04	10.04	10.19	10.19	33.12
Crude Throughput Project Affected Sources						
101	FCC Unit	56.61	46.18	297.01	297.01	3.18
733	FCCU Feed Heater	0.42	0.44	1.76	1.76	0.30
735	Kerosene/HCN HTU Feed Heater	0.36	0.39	6.41	6.41	0.26
736	Diesel HTU Heater	0.42	0.49	10.39	10.39	0.06
741	D2/VGO Hydrotreater Feed Heater	0.33	0.64	8.01	8.01	0.44
737	Naphtha HDS Heater	1.87	1.96	26.07	26.07	1.35
738	Platformer Feed Heater	13.44	14.10	147.14	147.14	9.73
739	Isocracker 1st Stage Heater	0.96	1.01	15.65	15.65	0.70
740	Isocracker Splitter Reboiler	1.19	1.25	15.70	15.70	0.86
742	VCD 541 VAC Heater	0.71	0.77	13.38	13.38	0.51
743	VCD 542 VAC Heater	0.78	0.44	4.48	4.48	0.02
746	VCD 544 VAC Heater	2.88	2.37	12.53	12.53	2.19
744	ACD 543 Crude Heater	7.22	7.89	28.30	28.30	5.23
745	ACD 544 Crude Heater	7.59	8.29	32.82	32.82	5.49
165	Tank 93	-	-	-	-	2.46
166	Tank 94	-	-	-	-	1.61
126	Tank 95	-	-	-	-	2.13
127	Tank 96	-	-	-	-	3.27
137	Tank 152	-	-	-	-	1.38
138	Tank 153	-	-	-	-	0.15
140	Tank 155	-	-	-	-	0.13
142	Tank 157	-	-	-	-	0.15
300	Tank 158 (Source ID 193)	-	-	-	-	3.50
143	Tank 159	-	-	-	-	3.32
194	Tank 160	-	-	-	-	4.86
144	Tank 161	-	-	-	-	2.70
145	Tank 162	-	-	-	-	0.87
146	Tank 163	-	-	-	-	1.60
147	Tank 164	-	-	-	-	2.53
148	Tank 165	-	-	-	-	3.09
149	Tank 166	-	-	-	-	2.16
150	Tank 168	-	-	-	-	1.53
152	Tank 170	-	-	-	-	3.02
155	Tank 174	-	-	-	-	4.09
156	Tank 175	-	-	-	-	5.35
157	Tank 178	-	-	-	-	4.53
160	Tank 181	-	-	-	-	3.03
161	Tank 182	-	-	-	-	6.52
163	Tank 185	-	-	-	-	7.02
164	Tank 186	-	-	-	-	4.75
Total Baseline Emissions (tons/24 months)		205.42	238.75	1,286.16	1,286.16	279.26
Total Baseline Actual Emissions		102.71	119.38	643.08	643.08	139.63
Baseline Period		Aug-13	Aug-13	Aug-13	Aug-13	Aug-13
		Jul-15	Jul-15	Jul-15	Jul-15	Jul-15

Table C-3
Monroe Energy, LLC - Trainer, PA Refinery
Projected Future Operations

Emission Unit		Projected Heat Duty ^(a)		Projected Annual Hours of Operation
		MMBtu/hr	MMBtu/yr	
ULSG Affected and New Sources				
34	Boiler 9	-	-	8,760
35	Boiler 10	-	-	8,760
102	SRU	-	-	8,760
103	Main Flare	-	-	8,760
-	Feed Heater 1	99.6	872,496	8,760
-	Feed Heater 2	44.2	387,192	8,760
-	Cooling Tower	-	-	8,760
-	Fugitives	-	-	8,760
Crude Throughput Project Affected Sources				
34	Boiler 9	-	-	8,760
35	Boiler 10	-	-	8,760
102	SRU	-	-	8,760
103	Main Flare	-	-	8,760
101	FCC Unit ^(b)	-	-	8,760
733	FCCU Feed Heater	23	201,480	8,760
735	Kerosene/HCN HTU Feed Heater	8.3	72,708	8,760
736	Diesel HTU Heater	20	175,200	8,760
741	D2/VGO Hydrotreater Feed Heater	18	157,680	8,760
737	Naphtha HDS Heater	76	665,760	8,760
738	Platformer Feed Heater	493	4,318,680	8,760
739	Isocracker 1st Stage Heater	33	289,080	8,760
740	Isocracker Splitter Reboiler	44	385,440	8,760
742	VCD 541 VAC Heater	36	315,360	8,760
743	VCD 542 VAC Heater	20	175,200	8,760
746	VCD 544 VAC Heater	71	621,960	8,760
744	ACD 543 Crude Heater	260	2,277,600	8,760
745	ACD 544 Crude Heater	260	2,277,600	8,760
165	Tank 93	-	-	8,760
166	Tank 94	-	-	8,760
126	Tank 95	-	-	8,760
127	Tank 96	-	-	8,760
137	Tank 152	-	-	8,760
138	Tank 153	-	-	8,760
140	Tank 155	-	-	8,760
142	Tank 157	-	-	8,760
300	Tank 158 (Source ID 193)	-	-	8,760
143	Tank 159	-	-	8,760
194	Tank 160	-	-	8,760
144	Tank 161	-	-	8,760
145	Tank 162	-	-	8,760
146	Tank 163	-	-	8,760
147	Tank 164	-	-	8,760
148	Tank 165	-	-	8,760
149	Tank 166	-	-	8,760
150	Tank 168	-	-	8,760
152	Tank 170	-	-	8,760
155	Tank 174	-	-	8,760
156	Tank 175	-	-	8,760
157	Tank 178	-	-	8,760
160	Tank 181	-	-	8,760
161	Tank 182	-	-	8,760
163	Tank 185	-	-	8,760
164	Tank 186	-	-	8,760

^(a) Based on 195,000 BPD crude rate from 10 year plan.

^(b) Emissions are based on pounds of coke burned in the catalyst regenerator instead of fuel. Please see table C-4 for more details.

Table C-18
Monroe Energy, LLC - Trainer, PA Refinery
Projected Actual Emissions from Boiler 9

Pollutant	Emission Factor	Emission Factor Units	Notes	Projected Future Actual Emissions ^{(a),(b)}	
				lb/hr	tpy
Filterable PM	7.00E-04	lb/MMBtu	2014 stack test data	0.16	0.70
Total PM ₁₀	5.50E-03	lb/MMBtu	2014 stack test data	1.25	5.48
Total PM _{2.5}	4.90E-03	lb/MMBtu	2014 stack test data	1.11	4.88
SO ₂	1.00E-03	lb/MMBtu	CEM data and 2009 stack test	0.23	1.00
NO _x	4.26E-03	lb/MMBtu	2014 CEMS data - annual average of hourly data	0.97	4.24
VOC	2.97E-04	lb/MMBtu	2014 stack test data	0.07	0.30
CO	1.29E-03	lb/MMBtu	2014 CEMS data - annual average of hourly data	0.29	1.29
Pb	5.00E-04	lb/MMSCF	AP-42 Chapter 1.4 Natural Gas Combustion Table 1.4-2	1.05E-04	4.62E-04
H ₂ S	8.50E-05	lb/MMBtu	U.S. EPA's memo titled "Emission Estimation Protocol for Petroleum Refineries" from May 2011, Table 4-3.	0.02	0.08
TRS ^(c)	8.50E-05	lb/MMBtu	U.S. EPA's memo titled "Emission Estimation Protocol for Petroleum Refineries" from May 2011, Table 4-3.	0.02	0.08
CO ₂	120,000	lb/MMSCF	AP-42 Chapter 1.4 Natural Gas Combustion Table 1.4-2	25,302.14	110,823.39
N ₂ O	2.2	lb/MMSCF	AP-42 Chapter 1.4 Natural Gas Combustion Table 1.4-2	0.46	2.03
CH ₄	2.3	lb/MMSCF	AP-42 Chapter 1.4 Natural Gas Combustion Table 1.4-2	0.48	2.12
Total GHG	N/A	N/A	Emissions are calculated as the sum of CO ₂ , N ₂ O, and CH ₄ .	25,303.09	110,827.55
CO ₂ e ^(d)	N/A	N/A	Emissions are calculated according to 40 CFR Part 98 Equation A-1.	25,452.50	111,481.96

^(a) Monroe proportionally added the fuel needed to accommodate the additional steam demand based on fuel usages in 2013 and 2014 to the maximum baseline fuel usage of Boilers 9 and 10, as shown below. Fuel additions were based on a total additional steam demand of 5,800 lbs/hr for both the ULSG Construction and the Crude Oil Throughput project, 8,760 hours of operating per year, and an assumed heat input of 1,350 Btu to generate 1 lb of steam.

Baseline Years		Fuel Usage + Additional for Steam Demand (MMcf/yr)
2013	2014	1,847.06

^(b) Projected future actual emissions were calculated assuming the following:

Parameter	Value	Units/Notes
Operating Hours	8,760	hr/yr
Conversion Factor 1	2,000	lb/ton
Fuel Gas Heating Value	1,078	MMBtu/MMscf

^(c) Emission factor for TRS is assumed to be equal to the emission factor for H₂S.

^(d) CO₂e is carbon dioxide equivalent, calculated according to 40 CFR Part 98 Equation A-1:

$$CO_2e = \sum_{i=1}^n GHG_i \times GWP_i$$

where GHG_i = annual mass emissions of greenhouse gas i (short tons/year)

GWP_i = global warming potential of greenhouse gas i from Table A-1 (below)

Pollutant	GWP (100 year)
CO ₂	1
N ₂ O	298
CH ₄	25

Table C-19
Monroe Energy, LLC - Trainer, PA Refinery
Projected Actual Emissions from Boiler 10

Pollutant	Emission Factor	Emission Factor Units	Notes	Projected Future Actual Emissions ^{(a),(b)}	
				lb/hr	tpy
Filterable PM	4.00E-04	lb/MMBtu	2014 stack test data	0.09	0.38
Total PM ₁₀	3.10E-03	lb/MMBtu	2014 stack test data	0.67	2.96
Total PM _{2.5}	3.00E-03	lb/MMBtu	2014 stack test data	0.65	2.86
SO ₂	3.00E-03	lb/MMBtu	CEM data and 2009 stack test	0.65	2.86
NO _x	3.96E-03	lb/MMBtu	2014 CEMS data - annual average of hourly data	0.86	3.78
VOC	2.69E-04	lb/MMBtu	2014 stack test data	0.06	0.26
CO	4.97E-03	lb/MMBtu	2014 CEMS data - annual average of hourly data	1.08	4.74
Pb	5.00E-04	lb/MMSCF	AP-42 Chapter 1.4 Natural Gas Combustion Table 1.4-2	1.01E-04	4.42E-04
H ₂ S	8.50E-05	lb/MMBtu	U.S. EPA's memo titled "Emission Estimation Protocol for Petroleum Refineries" from May 2011, Table 4-3.	0.02	0.08
TRS ^(c)	8.50E-05	lb/MMBtu	U.S. EPA's memo titled "Emission Estimation Protocol for Petroleum Refineries" from May 2011, Table 4-3.	0.02	0.08
CO ₂	120,000	lb/MMSCF	AP-42 Chapter 1.4 Natural Gas Combustion Table 1.4-2	24,229.19	106,123.87
N ₂ O	2.2	lb/MMSCF	AP-42 Chapter 1.4 Natural Gas Combustion Table 1.4-2	0.44	1.95
CH ₄	2.3	lb/MMSCF	AP-42 Chapter 1.4 Natural Gas Combustion Table 1.4-2	0.46	2.03
Total GHG	N/A	N/A	Emissions are calculated as the sum of CO ₂ , N ₂ O, and CH ₄ .	24,230.10	106,127.85
CO ₂ e ^(d)	N/A	N/A	Emissions are calculated according to 40 CFR Part 98 Equation A-1.	24,373.18	106,754.51

^(a) Monroe proportionally added the fuel needed to accommodate the additional steam demand based on fuel usages in 2013 and 2014 to the maximum baseline fuel usage of Boilers 9 and 10, as shown below. Fuel additions were based on a total additional steam demand of 5,800 lbs/hr for both the ULSG Construction and the Crude Oil Throughput project, 8,760 hours of operating per year, and an assumed heat input of 1,350 Btu to generate 1 lb of steam.

Baseline Years		Fuel Usage + Additional for Steam Demand (MMcf/yr)
2013	2014	1,768.73

^(b) Projected future actual emissions were calculated assuming the following:

Parameter	Value	Units/Notes
Operating Hours	8,760	hr/yr
Conversion Factor 1	2,000	lb/ton
Fuel Gas Heating Value	1,078	MMBtu/MMscf

^(c) Emission factor for TRS is assumed to be equal to the emission factor for H₂S.

^(d) CO₂e is carbon dioxide equivalent, calculated according to 40 CFR Part 98 Equation A-1:

$$CO_2e = \sum_{i=1}^n GHG_i \times GWP_i$$

where GHG_i = annual mass emissions of greenhouse gas i (short tons/year)

GWP_i = global warming potential of greenhouse gas i from Table A-1 (below)

Pollutant	GWP (100 year)
CO ₂	1
N ₂ O	298
CH ₄	25

Table C-31
Monroe Energy, LLC - Trainer, PA Facility
Projected Future Actual Emissions

Emission Unit		Emission Rate (tpy)								
		PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	VOC	CO	H ₂ S	CO ₂ e ^(a)
ULSG Affected Sources										
34	Boiler 9	0.70	5.48	4.88	1.00	4.24	0.30	1.29	0.08	110,823.39
35	Boiler 10	0.38	2.96	2.86	2.86	3.78	0.26	4.74	0.08	106,754.51
102	SRU	0.11	0.44	0.44	40.33	5.83	0.32	4.90	0.00	31,828.54
103	Main Flare	1.25	1.74	1.74	4.15	3.15	6.48	17.13	2.47	6,365.71
Crude Throughput Project Affected Sources										
101	FCC Unit	84.62	110.60	96.21	88.82	432.52	3.20	16.35	-	756,643.87
733	FCCU Feed Heater	0.18	0.72	0.72	0.78	3.02	0.52	7.93	8.56E-03	13,159.88
735	Kerosene/HCN HTU Feed Heater	0.06	0.25	0.25	0.28	4.51	0.18	2.81	3.09E-03	4,749.00
736	Diesel HTU Heater	0.11	0.62	0.62	0.67	13.84	0.39	0.18	7.45E-03	11,443.37
741	D2/VGO Hydrotreater Feed Heater	0.15	0.59	0.59	0.61	7.71	0.42	6.48	6.70E-03	10,299.04
737	Naphtha HDS Heater	0.61	2.43	2.43	2.55	33.29	1.76	26.88	0.03	43,484.82
738	Platformer Feed Heater	4.06	16.23	16.23	17.03	185.70	11.75	0.15	0.18	282,079.15
739	Isocracker 1st Stage Heater	0.26	1.03	1.03	1.08	16.77	0.75	11.43	0.01	18,881.57
740	Isocracker Splitter Reboiler	0.34	1.37	1.37	1.44	18.05	0.99	15.17	0.02	25,175.42
742	VCD 541 VAC Heater	0.27	1.06	1.06	1.16	20.50	0.77	11.76	0.01	20,598.07
743	VCD 542 VAC Heater	0.15	0.62	0.62	0.67	6.75	0.03	0.02	7.45E-03	11,443.37
746	VCD 544 VAC Heater	0.55	2.19	2.19	2.39	12.44	2.18	5.29	0.03	40,623.97
744	ACD 543 Crude Heater	2.01	8.02	8.02	8.77	45.55	5.81	88.66	0.10	148,763.85
745	ACD 544 Crude Heater	2.00	8.01	8.01	8.75	50.11	5.80	88.55	0.10	148,763.85
34	Boiler 9	0.70	5.48	4.88	1.00	4.24	0.30	1.29	0.08	111,481.96
35	Boiler 10	0.38	2.96	2.86	2.86	3.78	0.26	4.74	0.08	106,754.51
102	SRU	0.11	0.44	0.44	40.33	5.83	0.32	4.90	0.00	31,828.54
103	Main Flare	1.25	1.74	1.74	4.15	3.15	6.48	17.13	2.47	6,365.71
165	Tank 93	-	-	-	-	-	1.92	-	-	-
166	Tank 94	-	-	-	-	-	2.76	-	-	-
126	Tank 95	-	-	-	-	-	3.46	-	-	-
127	Tank 96	-	-	-	-	-	4.45	-	-	-
137	Tank 152	-	-	-	-	-	5.06	-	-	-
138	Tank 153	-	-	-	-	-	0.19	-	-	-
140	Tank 155	-	-	-	-	-	0.18	-	-	-
142	Tank 157	-	-	-	-	-	0.21	-	-	-
300	Tank 158 (Source ID 193)	-	-	-	-	-	13.15	-	-	-
143	Tank 159	-	-	-	-	-	3.97	-	-	-
194	Tank 160	-	-	-	-	-	0.22	-	-	-
144	Tank 161	-	-	-	-	-	6.04	-	-	-
145	Tank 162	-	-	-	-	-	3.25	-	-	-
146	Tank 163	-	-	-	-	-	4.25	-	-	-
147	Tank 164	-	-	-	-	-	3.79	-	-	-
148	Tank 165	-	-	-	-	-	8.26	-	-	-
149	Tank 166	-	-	-	-	-	3.55	-	-	-
150	Tank 168	-	-	-	-	-	2.89	-	-	-
152	Tank 170	-	-	-	-	-	6.13	-	-	-
155	Tank 174	-	-	-	-	-	12.01	-	-	-
156	Tank 175	-	-	-	-	-	7.43	-	-	-
157	Tank 178	-	-	-	-	-	3.23	-	-	-
160	Tank 181	-	-	-	-	-	8.75	-	-	-
161	Tank 182	-	-	-	-	-	20.53	-	-	-
163	Tank 185	-	-	-	-	-	11.26	-	-	-
164	Tank 186	-	-	-	-	-	5.47	-	-	-
N/A	New Feed Heaters	3.15	3.15	3.15	4.42	22.04	3.15	17.08	-	-
N/A	New Cooling Tower	0.16	0.16	0.16	-	-	6.02	-	-	-
N/A	Additional Fugitive Emissions	-	-	-	-	-	5.13	-	-	-
Total Projected Future Actual Emissions		103.54	178.27	162.50	236.11	906.79	205.97	354.83	5.77	2,048,312.10

^(a) CO₂e is carbon dioxide equivalent, calculated according to 40 CFR 98 Equation A-1:

$$CO_2e = \sum_{i=1}^n GHG_i \times GWP_i$$

where GHG_i = annual mass emissions of greenhouse gas i (short tons/year)
GWP_i = global warming potential of greenhouse gas i from the table below

Pollutant	GWP (100 year)
CO ₂	1
N ₂ O	298
CH ₄	25

Additional input of carbon
calculation over
correcting this?

Project 1

Table C-33
Monroe Energy, LLC - Trainer, PA Refinery
Project Emission Increases Summary - Step 1

Source	Pollutant	Projected Actual Emissions (PAE)	Baseline Actual Emissions (BAE)	Emission Increases (PAE - BAE)	Emissions Which Could Have Been Accommodated (CHA)	Excludable Emissions (CHA - BAE)	Total Project Emission Increases (PAE - Excludable - BAE)
tons/yr							
ULSG Affected Sources							
34	Boiler 9	PM	0.70	0.53	0.17	-	0.17
		PM ₁₀	5.48	1.69	3.79	-	3.79
		PM _{2.5}	4.88	1.51	3.37	-	3.37
		SO ₂	1.90	1.93	0.00	-	0.00
		NO _x	4.24	4.14	0.10	-	0.10
		VOC	0.30	0.11	0.19	-	0.19
		CO	1.29	1.17	0.12	-	0.12
		Lead	4.62E-04	4.51E-04	1.07E-05	-	1.07E-05
		Fluorides	-	0.00	-	-	-
		H ₂ SO ₄	-	0.00	-	-	0.03
		H ₂ S	0.08	0.06	0.03	-	0.03
		TRS	0.08	0.06	0.03	-	37,942.58
		CO ₂	110,823.39	72,880.82	37,942.58	-	1.89
		N ₂ O	2.03	0.14	1.89	-	0.75
		CH ₄	2.12	1.37	0.75	-	0.00
		PM	0.38	0.38	0.00	-	1.89
		PM ₁₀	2.96	1.06	1.89	-	1.85
		PM _{2.5}	2.86	1.01	1.85	-	0.95
35	Boiler 10	SO ₂	2.86	1.91	0.95	-	0.00
		NO _x	3.78	3.89	0.00	-	0.16
		VOC	0.26	0.10	0.16	-	0.00
		CO	4.74	8.72	0.00	-	1.01E-05
		Lead	4.42E-04	4.32E-04	1.01E-05	-	-
		Fluorides	-	0.00	-	-	-
		H ₂ SO ₄	-	0.00	-	-	0.02
		H ₂ S	0.08	0.06	0.02	-	0.02
		TRS	0.08	0.06	0.02	-	22,641.95
		CO ₂	106,123.87	83,481.92	22,641.95	-	1.79
		N ₂ O	1.95	0.16	1.79	-	0.46
		CH ₄	2.03	1.57	0.46	-	0.01
		PM	0.11	0.10	0.01	-	0.07
		PM ₁₀	0.44	0.38	0.07	-	0.07
		PM _{2.5}	0.44	0.38	0.07	-	21.06
		SO ₂	40.33	19.27	21.06	-	0.62
		NO _x	5.83	5.22	0.62	-	0.08
		VOC	0.32	0.24	0.08	-	1.34
		CO	4.90	3.56	1.34	-	8.78E-06
102	SRU	Lead	2.92E-05	2.04E-05	8.78E-06	-	-
		Fluorides	-	0.00	-	-	-
		H ₂ SO ₄	-	0.00	-	-	0.00
		H ₂ S	0.00	0.00	0.00	-	-
		TRS	2.92E-05	-	-	-	0.00
		CO ₂	0.00	2,852.70	0.00	-	0.00
		N ₂ O	0.00	0.06	0.00	-	0.00
		CH ₄	0.00	5.88E-03	0.00	-	0.00
		PM	1.25	4.05	0.00	-	0.00
		PM ₁₀	1.74	5.04	0.00	-	0.00
		PM _{2.5}	1.74	5.04	0.00	-	0.00
		SO ₂	4.15	10.19	0.00	-	0.00
		NO _x	3.15	10.19	0.00	-	0.00
		VOC	6.48	33.12	0.00	-	0.00
		CO	17.13	58.11	0.00	-	9.96E-05
		Lead	2.14E-04	1.14E-04	9.96E-05	-	0.00
		Fluorides	0.00	0.00	0.00	-	0.00
		H ₂ SO ₄	0.00	0.00	0.00	-	0.00
		H ₂ S	2.47	14.23	0.00	-	-
103	Main Flare	TRS	-	-	-	-	0.00
		CO ₂	0.00	51,382.53	0.00	-	0.00
		N ₂ O	0.00	0.96	0.00	-	0.00
		CH ₄	0.00	8.75	0.00	-	0.00

Table C-33
Monroe Energy, LLC - Trainer, PA Refinery
Project Emission Increases Summary

8/26/16 12:41:00 PM

Source	Pollutant	Projected Actual Emissions (PAE)	Baseline Actual Emissions (BAE)	Emission Increases (PAE - BAE)	Emissions Which Could Have Been Accomodated (CHA)	Excludable Emissions (CHA - BAE)	Total Project Emission Increases (PAE - Excludable - BAE)	
Crude Throughput Project Affected Sources		tons/yr						
34	25 <i>Boiler 9?</i>	PM						
		PM ₁₀						
		PM _{2.5}						
		SO ₂						
		NO _x						
		VOC						
		CO						
		Lead						
		Fluorides						
		H ₂ SO ₄						
		H ₂ S						
		TRS						
		CO ₂						
		N ₂ O						
		CH ₄						
35	0 <i>Boiler 10?</i>	PM						
		PM ₁₀						
		PM _{2.5}						
		SO ₂						
		NO _x						
		VOC						
		CO						
		Lead						
		Fluorides						
		H ₂ SO ₄						
		H ₂ S						
		TRS						
		CO ₂						
		N ₂ O						
		CH ₄						
102	SRU	PM						
		PM ₁₀						
		PM _{2.5}						
		SO ₂						
		NO _x						
		VOC						
		CO						
		Lead						
		Fluorides						
		H ₂ SO ₄						
		H ₂ S						
		TRS						
		CO ₂						
		N ₂ O						
		CH ₄						
103	Main Flare	PM						
		PM ₁₀						
		PM _{2.5}						
		SO ₂						
		NO _x						
		VOC						
		CO						
		Lead						
		Fluorides						
		H ₂ SO ₄						
		H ₂ S						
		TRS						
		CO ₂						
		N ₂ O						
		CH ₄						
101	FCC Unit	PM	84.62	43.06	41.56	93.30	50.24	0.00
		PM ₁₀	110.60	63.93	46.66	140.78	76.84	0.00
		PM _{2.5}	96.21	56.61	39.60	120.81	64.20	0.00
		SO ₂	88.82	46.18	42.64	96.67	50.49	0.00
		NO _x	432.52	297.01	135.51	454.41	157.40	0.00
		VOC	3.20	3.18	0.02	3.26	0.08	0.00
		CO	16.35	15.63	0.71	35.45	19.82	0.00
		Lead	-	2.47E-04	-	4.18E-04	1.71E-04	-
		Fluorides	-	0.00	-	0.00	0.00	-
		H ₂ SO ₄	-	0.00	-	0.00	0.00	-
		H ₂ S	-	-	-	0.00	-	-
		TRS	-	-	-	0.00	-	-
		CO ₂	754,773.34	499,375.51	255,397.83	560,274.64	60,899.13	194,498.70
		N ₂ O	4.42	2.93	1.50	3.28	0.36	1.14
		CH ₄	22.11	14.67	7.44	16.46	1.79	5.65

Emissions increases are accounted for in the "ULSG sources" section above.

Table C-33
Monroe Energy, LLC - Trainer, PA Refinery
Project Emission Increases Summary

Source		Pollutant	Projected Actual Emissions (PAE)	Baseline Actual Emissions (BAE)	Emission Increases (PAE - BAE)	Emissions Which Could Have Been Accommodated (CHA)	Excludable Emissions (CHA - BAE)	Total Project Emission Increases (PAE - Excludable - BAE)
tons/yr								
733	FCCU Feed Heater	PM	0.18	0.10	0.08	0.38	0.28	0.00
		PM ₁₀	0.72	0.42	0.30	1.52	1.10	0.00
		PM _{2.5}	0.72	0.42	0.30	1.52	1.10	0.00
		SO ₂	0.78	0.44	0.34	1.66	1.22	0.00
		NO _x	3.02	1.76	1.26	6.44	4.67	0.00
		VOC	0.52	0.30	0.22	1.10	0.80	0.00
		CO	7.93	0.93	7.00	11.29	10.36	0.00
		Lead	4.72E-05	3.73E-05	9.89E-06	9.99E-05	6.26E-05	0.00
		Fluorides	-	0.00	-	0.00	0.00	-
		H ₂ SO ₄	-	0.00	-	0.00	0.00	-
		H ₂ S	8.56E-03	0.01	0.00	0.02	8.85E-03	0.00
		TRS	8.56E-03	0.01	0.00	0.02	0.01	0.00
		CO ₂	13,103.51	16,695.75	0.00	34,001.33	17,305.58	0.00
		N ₂ O	0.13	0.17	0.00	0.35	0.18	0.00
		CH ₄	0.67	0.85	0.00	1.73	0.88	0.00
		PM	0.06	0.22	0.00	0.47	0.25	0.00
735	Kerosene/HCN HTU Feed Heater	PM ₁₀	0.25	0.36	0.00	0.50	0.15	0.00
		PM _{2.5}	0.25	0.36	0.00	0.50	0.15	0.00
		SO ₂	0.28	0.39	0.00	0.55	0.16	0.00
		NO _x	4.51	6.41	0.00	9.20	2.79	0.00
		VOC	0.18	0.26	0.00	0.36	0.11	0.00
		CO	2.81	3.23	0.00	5.23	2.00	0.00
		Lead	1.67E-05	1.82E-05	0.00	2.85E-05	1.03E-05	0.00
		Fluorides	-	0.00	-	0.00	0.00	-
		H ₂ SO ₄	-	0.00	-	0.00	0.00	-
		H ₂ S	3.09E-03	2.74E-03	3.54E-04	3.74E-03	1.00E-03	0.00
		TRS	3.09E-03	2.77E-03	3.22E-04	4.36E-03	1.59E-03	0.00
		CO ₂	4,728.66	4,319.92	408.74	6,671.34	2,351.42	0.00
		N ₂ O	0.05	0.04	4.16E-03	0.07	0.02	0.00
		CH ₄	0.24	0.22	0.02	0.34	0.12	0.00
		PM	0.11	0.24	0.00	0.63	0.39	0.00
		PM ₁₀	0.62	0.42	0.19	0.68	0.26	0.00
		PM _{2.5}	0.62	0.42	0.19	0.68	0.26	0.00
736	Diesel HTU Heater	SO ₂	0.67	0.49	0.18	0.81	0.31	0.00
		NO _x	13.84	10.39	3.45	16.45	6.07	0.00
		VOC	0.39	0.06	0.34	0.39	0.33	7.36E-03
		CO	0.18	3.49	0.00	10.87	7.38	0.00
		Lead	4.05E-05	3.35E-05	6.98E-06	6.47E-05	3.12E-05	0.00
		Fluorides	-	0.00	-	0.00	0.00	-
		H ₂ SO ₄	-	0.00	-	0.00	0.00	-
		H ₂ S	7.45E-03	9.06E-03	0.00	0.01	2.93E-03	0.00
		TRS	7.45E-03	9.24E-03	0.00	0.01	2.75E-03	0.00
		CO ₂	11,394.36	13,802.45	0.00	18,354.99	4,552.54	0.00
		N ₂ O	0.12	0.14	0.00	0.19	0.05	0.00
		CH ₄	0.58	0.70	0.00	0.93	0.23	0.00
		PM	0.15	0.43	0.00	0.79	0.36	0.00
		PM ₁₀	0.59	0.33	0.26	1.14	0.81	0.00
		PM _{2.5}	0.59	0.33	0.26	1.14	0.81	0.00
		SO ₂	0.61	0.64	0.00	1.20	0.56	0.00
		NO _x	7.71	8.01	0.00	15.06	7.05	0.00
741	D2/VGO Hydrotreater Feed Heater	VOC	0.42	0.44	0.00	0.83	0.39	0.00
		CO	6.48	7.44	0.00	15.41	7.97	0.00
		Lead	3.86E-05	4.78E-05	0.00	9.17E-05	4.39E-05	0.00
		Fluorides	-	0.00	-	0.00	0.00	-
		H ₂ SO ₄	-	0.00	-	0.00	0.00	-
		H ₂ S	6.70E-03	0.01	0.00	0.02	4.27E-03	0.00
		TRS	6.70E-03	0.01	0.00	0.02	7.79E-03	0.00
		CO ₂	10,254.92	23,209.06	0.00	34,559.53	11,350.47	0.00
		N ₂ O	0.10	0.24	0.00	0.35	0.12	0.00
		CH ₄	0.52	1.18	0.00	1.76	0.58	0.00

Table C-33
Monroe Energy, LLC - Trainer, PA Refinery
Project Emission Increases Summary

Source		Pollutant	Projected Actual Emissions (PAE)	Baseline Actual Emissions (BAE)	Emission Increases (PAE - BAE)	Emissions Which Could Have Been Accommodated (CHA)	Excludable Emissions (CHA - BAE)	Total Project Emission Increases (PAE - Excludable - BAE)
tons/yr								
737	Naphtha HDS Heater	PM	0.61	1.19	0.00	2.37	1.18	0.00
		PM ₁₀	2.43	1.87	0.56	2.37	0.50	0.06
		PM _{2.5}	2.43	1.87	0.56	2.37	0.50	0.06
		SO ₂	2.55	1.96	0.59	2.49	0.53	0.06
		NO _x	33.29	26.07	7.22	37.04	10.97	0.00
		VOC	1.76	1.35	0.41	1.72	0.36	0.04
		CO	26.88	20.86	6.01	26.25	5.38	0.63
		Lead	1.60E-04	1.22E-04	3.83E-05	1.56E-04	3.45E-05	3.75E-06
		Fluorides	-	0.00	-	0.00	0.00	-
		H ₂ SO ₄	-	0.00	-	0.00	0.00	-
		H ₂ S	0.03	0.02	6.14E-03	0.03	6.98E-03	0.00
		TRS	0.03	0.02	6.68E-03	0.03	7.52E-03	0.00
		CO ₂	43,298.56	33,037.72	10,260.84	44,576.75	11,539.03	0.00
		N ₂ O	0.44	0.34	0.10	0.45	0.12	0.00
		CH ₄	2.20	1.68	0.52	2.27	0.59	0.00
		PM	4.06	8.45	0.00	15.12	6.67	0.00
738	Platformer Feed Heater	PM ₁₀	16.23	13.44	2.79	15.46	2.01	0.78
		PM _{2.5}	16.23	13.44	2.79	15.46	2.01	0.78
		SO ₂	17.03	14.10	2.92	16.21	2.11	0.81
		NO _x	185.70	147.14	38.57	174.17	27.04	11.53
		VOC	11.75	9.73	2.02	11.19	1.46	0.56
		CO	0.15	1.57	0.00	7.11	5.54	0.00
		Lead	1.07E-03	9.42E-04	1.26E-04	1.10E-03	1.61E-04	0.00
		Fluorides	-	0.00	-	0.00	0.00	-
		H ₂ SO ₄	-	0.00	-	0.00	0.00	-
		H ₂ S	0.18	0.19	0.00	0.21	0.02	0.00
		TRS	0.18	0.19	0.00	0.21	0.02	0.00
		CO ₂	280,870.92	284,157.46	0.00	319,415.38	35,257.92	0.00
		N ₂ O	2.86	2.89	0.00	3.25	0.36	0.00
		CH ₄	14.28	14.45	0.00	16.24	1.79	0.00
		PM	0.26	0.55	0.00	1.07	0.52	0.00
		PM ₁₀	1.03	0.96	0.07	1.39	0.43	0.00
		PM _{2.5}	1.03	0.96	0.07	1.39	0.43	0.00
739	Isocracker 1st Stage Heater	SO ₂	1.08	1.01	0.07	1.46	0.45	0.00
		NO _x	16.77	15.65	1.12	21.75	6.10	0.00
		VOC	0.75	0.70	0.05	1.01	0.31	0.00
		CO	11.43	11.21	0.22	16.45	5.24	0.00
		Lead	6.80E-05	6.49E-05	3.08E-06	9.76E-05	3.27E-05	0.00
		Fluorides	-	0.00	-	0.00	0.00	-
		H ₂ SO ₄	-	0.00	-	0.00	0.00	-
		H ₂ S	0.01	9.24E-03	3.04E-03	0.02	5.95E-03	0.00
		TRS	0.01	9.38E-03	2.90E-03	0.02	5.81E-03	0.00
		CO ₂	18,800.69	14,711.55	4,089.14	23,249.17	8,537.61	0.00
		N ₂ O	0.19	0.15	0.04	0.24	0.09	0.00
		CH ₄	0.96	0.75	0.21	1.18	0.43	0.00
		PM	0.34	0.69	0.00	1.50	0.81	0.00
		PM ₁₀	1.37	1.19	0.18	1.50	0.31	0.00
		PM _{2.5}	1.37	1.19	0.18	1.50	0.31	0.00
		SO ₂	1.44	1.25	0.19	1.58	0.32	0.00
		NO _x	18.05	15.70	2.36	19.76	4.07	0.00
740	Isocracker Splitter Reboiler	VOC	0.99	0.86	0.13	1.09	0.22	0.00
		CO	15.17	13.38	1.78	17.58	4.19	0.00
		Lead	9.03E-05	7.83E-05	1.20E-05	1.05E-04	2.64E-05	0.00
		Fluorides	-	0.00	-	0.00	0.00	-
		H ₂ SO ₄	-	0.00	-	0.00	0.00	-
		H ₂ S	0.02	0.01	5.29E-03	0.02	4.02E-03	1.27E-03
		TRS	0.02	0.01	4.70E-03	0.02	3.90E-03	8.04E-04
		CO ₂	25,067.59	18,382.52	6,685.07	23,836.53	5,454.01	1,231.06
		N ₂ O	0.25	0.19	0.07	0.24	0.06	0.01
		CH ₄	1.27	0.93	0.34	1.21	0.28	0.06
		PM	0.27	0.18	0.09	0.29	0.12	0.00
		PM ₁₀	1.06	0.71	0.36	1.17	0.46	0.00
		PM _{2.5}	1.06	0.71	0.36	1.17	0.46	0.00
		SO ₂	1.16	0.77	0.39	1.28	0.50	0.00
		NO _x	20.50	13.38	7.12	21.87	8.49	0.00
		VOC	0.77	0.51	0.26	0.85	0.33	0.00
		CO	11.76	7.34	4.41	11.34	4.00	0.41
742	VCD 541 VAC Heater	Lead	7.00E-05	4.31E-05	2.69E-05	6.75E-05	2.45E-05	2.46E-06
		Fluorides	-	0.00	-	0.00	0.00	-
		H ₂ SO ₄	-	0.00	-	0.00	0.00	-
		H ₂ S	0.01	9.43E-03	3.97E-03	0.01	2.88E-03	1.10E-03
		TRS	0.01	9.09E-03	4.31E-03	0.01	2.57E-03	1.74E-03
		CO ₂	20,509.84	13,793.59	6,716.25	17,844.39	4,050.79	2,665.46
		N ₂ O	0.21	0.14	0.07	0.18	0.04	0.03
		CH ₄	1.04	0.70	0.34	0.91	0.21	0.14

Table C-33
Monroe Energy, LLC - Trainer, PA Refinery
Project Emission Increases Summary

Source		Pollutant	Projected Actual Emissions (PAE)	Baseline Actual Emissions (BAE)	Emission Increases (PAE - BAE)	Emissions Which Could Have Been Accommodated (CHA)	Excludable Emissions (CHA - BAE)	Total Project Emission Increases (PAE - Excludable - BAE)
tons/yr								
743	VCD 542 VAC Heater	PM	0.15	0.44	0.00	1.32	0.88	0.00
		PM ₁₀	0.62	0.78	0.00	1.32	0.53	0.00
		PM _{2.5}	0.62	0.78	0.00	1.32	0.53	0.00
		SO ₂	0.67	0.44	0.24	0.76	0.32	0.00
		NO _x	6.75	4.48	2.27	7.52	3.04	0.00
		VOC	0.03	0.02	9.65E-03	0.03	0.01	0.00
		CO	0.02	0.01	8.67E-03	0.02	0.01	0.00
		Lead	4.06E-05	2.38E-05	1.68E-05	4.60E-05	2.22E-05	0.00
		Fluorides	-	0.00	-	0.00	0.00	-
		H ₂ SO ₄	-	0.00	-	0.00	0.00	-
		H ₂ S	7.45E-03	0.01	0.00	0.01	2.44E-03	0.00
		TRS	7.45E-03	0.01	0.00	0.01	1.78E-03	0.00
		CO ₂	11,394.36	17,771.31	0.00	20,631.05	2,859.74	0.00
		N ₂ O	0.12	0.18	0.00	0.21	0.03	0.00
		CH ₄	0.58	0.90	0.00	1.05	0.15	0.00
		PM	0.55	1.35	0.00	3.20	1.85	0.00
746	VCD 544 VAC Heater	PM ₁₀	2.19	2.88	0.00	3.36	0.48	0.00
		PM _{2.5}	2.19	2.88	0.00	3.36	0.48	0.00
		SO ₂	2.39	2.37	0.02	2.88	0.52	0.00
		NO _x	12.44	12.53	0.00	14.63	2.10	0.00
		VOC	2.18	2.19	0.00	2.56	0.37	0.00
		CO	5.29	1.34	3.95	5.41	4.07	0.00
		Lead	1.44E-04	1.40E-04	4.35E-06	1.74E-04	3.41E-05	0.00
		Fluorides	-	0.00	-	0.00	0.00	-
		H ₂ SO ₄	-	0.00	-	0.00	0.00	-
		H ₂ S	0.03	0.02	2.82E-03	0.03	6.33E-03	0.00
		TRS	0.03	0.02	3.19E-03	0.03	6.71E-03	0.00
		CO ₂	40,449.97	35,464.65	4,985.32	45,828.20	10,363.55	0.00
		CO	0.41	0.36	0.05	0.47	0.11	0.00
		N ₂ O	2.06	1.80	0.25	2.33	0.53	0.00
		CH ₄	2.01	4.32	0.00	8.66	4.35	0.00
		PM	8.02	7.22	0.80	8.76	1.54	0.00
		PM ₁₀	8.02	7.22	0.80	8.76	1.54	0.00
744	ACD 543 Crude Heater	PM _{2.5}	8.77	7.89	0.87	9.57	1.68	0.00
		SO ₂	45.55	28.30	17.25	49.71	21.41	0.00
		NO _x	5.81	5.23	0.58	6.34	1.11	0.00
		VOC	88.66	81.32	7.34	96.84	15.52	0.00
		CO	5.28E-04	4.82E-04	4.59E-05	5.76E-04	9.45E-05	0.00
		Lead	-	0.00	-	0.00	0.00	-
		Fluorides	-	0.00	-	0.00	0.00	-
		H ₂ SO ₄	-	0.00	-	0.00	0.00	-
		H ₂ S	0.10	0.09	3.83E-03	0.11	0.01	0.00
		TRS	0.10	0.09	3.21E-03	0.11	0.01	0.00
		CO ₂	148,126.65	143,860.54	4,266.12	166,202.49	22,341.96	0.00
		CO	1.51	1.46	0.04	1.69	0.23	0.00
		N ₂ O	7.53	7.31	0.22	8.45	1.14	0.00
		CH ₄	2.00	4.68	0.00	9.23	4.55	0.00
		PM	8.01	7.59	0.43	9.23	1.64	0.00
		PM ₁₀	8.01	7.59	0.43	9.23	1.64	0.00
		PM _{2.5}	8.75	8.29	0.47	10.08	1.80	0.00
745	ACD 544 Crude Heater	SO ₂	50.11	32.82	17.28	56.20	23.37	0.00
		NO _x	5.80	5.49	0.31	6.68	1.19	0.00
		VOC	88.55	83.63	4.93	102.01	18.38	0.00
		CO	5.27E-04	4.91E-04	3.59E-05	6.07E-04	1.16E-04	0.00
		Lead	-	0.00	-	0.00	0.00	-
		Fluorides	-	0.00	-	0.00	0.00	-
		H ₂ SO ₄	-	0.00	-	0.00	0.00	-
		H ₂ S	0.10	0.09	3.40E-03	0.10	9.51E-03	0.00
		TRS	0.10	0.09	1.93E-03	0.10	8.04E-03	0.00
		CO ₂	148,126.65	145,398.35	2,728.31	157,482.30	12,083.95	0.00
		CO	1.51	1.48	0.03	1.60	0.12	0.00
		N ₂ O	7.53	7.39	0.14	8.01	0.61	0.00
		CH ₄	-	-	-	-	-	-
		PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
165	Tank 93	NO _x	-	-	-	-	-	-
		VOC	1.92	2.46	0.00	2.03	4.30E-01	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
		TRS	-	-	-	-	-	-
		CO ₂	-	-	-	-	-	-
		N ₂ O	-	-	-	-	-	-
		CH ₄	-	-	-	-	-	-

Table C-33
Monroe Energy, LLC - Trainer, PA Refinery
Project Emission Increases Summary

Source		Pollutant	Projected Actual Emissions (PAE)	Baseline Actual Emissions (BAE)	Emission Increases (PAE - BAE)	Emissions Which Could Have Been Accomodated (CHA)	Excludable Emissions (CHA - BAE)	Total Project Emission Increases (PAE - Excludable - BAE)
tons/yr								
166	Tank 94	PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	2.76	1.61	1.15	2.87	1.26	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
		TRS	-	-	-	-	-	-
		CO ₂	-	-	-	-	-	-
		N ₂ O	-	-	-	-	-	-
		CH ₄	-	-	-	-	-	-
126	Tank 95	PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	3.46	2.13	1.33	3.54	1.42	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
		TRS	-	-	-	-	-	-
		CO ₂	-	-	-	-	-	-
		N ₂ O	-	-	-	-	-	-
		CH ₄	-	-	-	-	-	-
127	Tank 96	PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	4.45	3.27	1.19	4.61	1.34	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
		TRS	-	-	-	-	-	-
		CO ₂	-	-	-	-	-	-
		N ₂ O	-	-	-	-	-	-
		CH ₄	-	-	-	-	-	-
137	Tank 152	PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	5.06	1.38	3.68	0.23	-1.15E+00	4.83
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
		TRS	-	-	-	-	-	-
		CO ₂	-	-	-	-	-	-
		N ₂ O	-	-	-	-	-	-
		CH ₄	-	-	-	-	-	-
138	Tank 153	PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	0.19	0.15	0.03	0.21	0.06	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
		TRS	-	-	-	-	-	-
		CO ₂	-	-	-	-	-	-
		N ₂ O	-	-	-	-	-	-
		CH ₄	-	-	-	-	-	-

Table C-33
Monroe Energy, LLC - Trainer, PA Refinery
Project Emission Increases Summary

Source		Pollutant	Projected Actual Emissions (PAE)	Baseline Actual Emissions (BAE)	Emission Increases (PAE - BAE)	Emissions Which Could Have Been Accommodated (CHA)	Excludable Emissions (CHA - BAE)	Total Project Emission Increases (PAE - Excludable - BAE)
			tons/yr					
140	Tank 155	PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	0.18	0.13	0.05	0.22	0.09	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
		TRS	-	-	-	-	-	-
		CO ₂	-	-	-	-	-	-
		N ₂ O	-	-	-	-	-	-
		CH ₄	-	-	-	-	-	-
142	Tank 157	PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	0.21	0.15	0.06	0.24	0.09	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
		TRS	-	-	-	-	-	-
		CO ₂	-	-	-	-	-	-
		N ₂ O	-	-	-	-	-	-
		CH ₄	-	-	-	-	-	-
300	Tank 158 (Source ID 193)	PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	13.15	3.50	9.66	28.01	24.51	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
		TRS	-	-	-	-	-	-
		CO ₂	-	-	-	-	-	-
		N ₂ O	-	-	-	-	-	-
		CH ₄	-	-	-	-	-	-
143	Tank 159	PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	3.97	3.32	0.65	4.06	0.74	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
		TRS	-	-	-	-	-	-
		CO ₂	-	-	-	-	-	-
		N ₂ O	-	-	-	-	-	-
		CH ₄	-	-	-	-	-	-
194	Tank 160	PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	0.22	4.86	0.00	0.26	-4.61E+00	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
		TRS	-	-	-	-	-	-
		CO ₂	-	-	-	-	-	-
		N ₂ O	-	-	-	-	-	-
		CH ₄	-	-	-	-	-	-

Table C-33
Monroe Energy, LLC - Trainer, PA Refinery
Project Emission Increases Summary

Source		Pollutant	Projected Actual Emissions (PAE)	Baseline Actual Emissions (BAE)	Emission Increases (PAE - BAE)	Emissions Which Could Have Been Accommodated (CHA)	Excludable Emissions (CHA - BAE)	Total Project Emission Increases (PAE - Excludable - BAE)
tons/yr								
144	Tank 161	PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	6.04	2.70	3.34	6.21	3.51	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
		TRS	-	-	-	-	-	-
		CO ₂	-	-	-	-	-	-
		N ₂ O	-	-	-	-	-	-
145	Tank 162	CH ₄	-	-	-	-	-	-
		PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	3.25	0.87	2.39	6.36	5.49	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
		TRS	-	-	-	-	-	-
		CO ₂	-	-	-	-	-	-
146	Tank 163	N ₂ O	-	-	-	-	-	-
		CH ₄	-	-	-	-	-	-
		PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	4.25	1.60	2.64	4.57	2.97	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
		TRS	-	-	-	-	-	-
147	Tank 164	CO ₂	-	-	-	-	-	-
		N ₂ O	-	-	-	-	-	-
		CH ₄	-	-	-	-	-	-
		PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	3.79	2.53	1.26	7.79	5.26	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
148	Tank 165	TRS	-	-	-	-	-	-
		CO ₂	-	-	-	-	-	-
		N ₂ O	-	-	-	-	-	-
		CH ₄	-	-	-	-	-	-
		PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	8.26	3.09	5.17	20.33	17.24	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-

Table C-33
Monroe Energy, LLC - Trainer, PA Refinery
Project Emission Increases Summary

Source		Pollutant	Projected Actual Emissions (PAE)	Baseline Actual Emissions (BAE)	Emission Increases (PAE - BAE)	Emissions Which Could Have Been Accomodated (CHA)	Excludable Emissions (CHA - BAE)	Total Project Emission Increases (PAE - Excludable - BAE)
tons/yr								
149	Tank 166	PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	3.55	2.16	1.40	4.91	2.75	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
		TRS	-	-	-	-	-	-
		CO ₂	-	-	-	-	-	-
		N ₂ O	-	-	-	-	-	-
150	Tank 168	CH ₄	-	-	-	-	-	-
		PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	2.89	1.53	1.36	0.24	-1.29E+00	2.65
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
		TRS	-	-	-	-	-	-
		CO ₂	-	-	-	-	-	-
152	Tank 170	N ₂ O	-	-	-	-	-	-
		CH ₄	-	-	-	-	-	-
		PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	6.13	3.02	3.11	6.16	3.15	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
		TRS	-	-	-	-	-	-
155	Tank 174	CO ₂	-	-	-	-	-	-
		N ₂ O	-	-	-	-	-	-
		CH ₄	-	-	-	-	-	-
		PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	12.01	4.09	7.92	13.79	9.70	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
156	Tank 175	TRS	-	-	-	-	-	-
		CO ₂	-	-	-	-	-	-
		N ₂ O	-	-	-	-	-	-
		CH ₄	-	-	-	-	-	-
		PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	7.43	5.35	2.07	12.61	7.25	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-

Table C-33
Monroe Energy, LLC - Trainer, PA Refinery
Project Emission Increases Summary

Source		Pollutant	Projected Actual Emissions (PAE)	Baseline Actual Emissions (BAE)	Emission Increases (PAE - BAE)	Emissions Which Could Have Been Accommodated (CHA)	Excludable Emissions (CHA - BAE)	Total Project Emission Increases (PAE - Excludable - BAE)
tons/yr								
157	Tank 178	PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	3.23	4.53	0.00	5.85	1.32	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
		TRS	-	-	-	-	-	-
		CO ₂	-	-	-	-	-	-
		N ₂ O	-	-	-	-	-	-
		CH ₄	-	-	-	-	-	-
160	Tank 181	PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	8.75	3.03	5.72	22.24	19.21	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
		TRS	-	-	-	-	-	-
		CO ₂	-	-	-	-	-	-
		N ₂ O	-	-	-	-	-	-
		CH ₄	-	-	-	-	-	-
161	Tank 182	PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	20.53	6.52	14.01	39.43	32.91	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
		TRS	-	-	-	-	-	-
		CO ₂	-	-	-	-	-	-
		N ₂ O	-	-	-	-	-	-
		CH ₄	-	-	-	-	-	-
163	Tank 185	PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	11.26	7.02	4.23	11.81	4.78	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
		TRS	-	-	-	-	-	-
		CO ₂	-	-	-	-	-	-
		N ₂ O	-	-	-	-	-	-
		CH ₄	-	-	-	-	-	-
164	Tank 186	PM	-	-	-	-	-	-
		PM ₁₀	-	-	-	-	-	-
		PM _{2.5}	-	-	-	-	-	-
		SO ₂	-	-	-	-	-	-
		NO _x	-	-	-	-	-	-
		VOC	5.47	4.75	0.72	6.60	1.85	0.00
		CO	-	-	-	-	-	-
		Lead	-	-	-	-	-	-
		Fluorides	-	-	-	-	-	-
		H ₂ SO ₄	-	-	-	-	-	-
		H ₂ S	-	-	-	-	-	-
		TRS	-	-	-	-	-	-
		CO ₂	-	-	-	-	-	-
		N ₂ O	-	-	-	-	-	-
		CH ₄	-	-	-	-	-	-

Table C-34
Monroe Energy, LLC - Trainer, PA Refinery
PSD Applicability Assessment Summary

Emission Unit		Project Related Emissions Increase (tpy)										CO ₂ e ^{(a),(b)}
		PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	VOC	CO	Lead	H ₂ S	TRS	
ULSG Affected and New Sources												
34	Boiler 9	0.17	3.79	3.37	0.00	0.10	0.19	0.12	1.07E-05	0.03	0.03	37,947.87
35	Boiler 10	0.00	1.89	1.85	0.95	0.00	0.16	0.00	1.01E-05	0.02	0.02	22,646.45
102	SRU	0.01	0.07	0.07	21.06	0.62	0.08	1.34	8.78E-06	0.00	-	0.00
103	Main Flare	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.96E-05	0.00	-	0.00
N/A	New Feed Heaters	3.15	3.15	3.15	4.42	22.04	3.15	17.08	2.66E-04	-	-	81,935.43
N/A	New Cooling Tower	0.16	0.16	0.16	-	-	6.02	-	-	-	-	-
N/A	Additional Fugitive Emissions	-	-	-	-	-	5.13	-	-	-	-	-
Project Emissions Increases		3.49	9.05	8.60	26.43	22.76	14.73	18.53	3.96E-04	0.04	0.04	142,529.75
Crude Throughput Project Affected Sources												
101	FCC Unit	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	194,979.46
733	FCCU Feed Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
735	Kerosene/HCN HTU Feed Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
736	Diesel HTU Heater	0.00	0.00	0.00	0.00	0.00	7.36E-03	0.00	0.00	0.00	0.00	0.00
741	D2/VGO Hydrotreater Feed Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
737	Naphtha HDS Heater	0.00	0.06	0.06	0.06	0.00	0.04	0.63	3.75E-06	0.00	0.00	0.00
738	Platformer Feed Heater	0.00	0.78	0.78	0.81	11.53	0.56	0.00	0.00	0.00	0.00	0.00
739	Isocracker 1st Stage Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.27E-03	8.04E-04	1,236.35
740	Isocracker Splitter Reboiler	0.00	0.00	0.00	0.00	0.00	0.00	0.41	2.46E-06	1.10E-03	1.74E-03	2,676.92
742	VCD 541 VAC Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
743	VCD 542 VAC Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
746	VCD 544 VAC Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
744	ACD 543 Crude Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
745	ACD 544 Crude Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165	Tank 93	-	-	-	-	-	0.00	-	-	-	-	-
166	Tank 94	-	-	-	-	-	0.00	-	-	-	-	-
126	Tank 95	-	-	-	-	-	0.00	-	-	-	-	-
127	Tank 96	-	-	-	-	-	0.00	-	-	-	-	-
137	Tank 152	-	-	-	-	-	4.83	-	-	-	-	-
138	Tank 153	-	-	-	-	-	0.00	-	-	-	-	-
140	Tank 155	-	-	-	-	-	0.00	-	-	-	-	-
142	Tank 157	-	-	-	-	-	0.00	-	-	-	-	-
300	Tank 158 (Source ID 193)	-	-	-	-	-	0.00	-	-	-	-	-
143	Tank 159	-	-	-	-	-	0.00	-	-	-	-	-
194	Tank 160	-	-	-	-	-	0.00	-	-	-	-	-
144	Tank 161	-	-	-	-	-	0.00	-	-	-	-	-
145	Tank 162	-	-	-	-	-	0.00	-	-	-	-	-
146	Tank 163	-	-	-	-	-	0.00	-	-	-	-	-
147	Tank 164	-	-	-	-	-	0.00	-	-	-	-	-
148	Tank 165	-	-	-	-	-	0.00	-	-	-	-	-
149	Tank 166	-	-	-	-	-	0.00	-	-	-	-	-
150	Tank 168	-	-	-	-	-	2.65	-	-	-	-	-
152	Tank 170	-	-	-	-	-	0.00	-	-	-	-	-
155	Tank 174	-	-	-	-	-	0.00	-	-	-	-	-
156	Tank 175	-	-	-	-	-	0.00	-	-	-	-	-
157	Tank 178	-	-	-	-	-	0.00	-	-	-	-	-
160	Tank 181	-	-	-	-	-	0.00	-	-	-	-	-
161	Tank 182	-	-	-	-	-	0.00	-	-	-	-	-
163	Tank 185	-	-	-	-	-	0.00	-	-	-	-	-
164	Tank 186	-	-	-	-	-	0.00	-	-	-	-	-
Project Emissions Increases		0.00	0.83	0.83	0.87	11.53	8.08	1.04	6.21E-06	2.36E-03	2.55E-03	198,892.74
Total Project Emissions Increases		3.49	9.89	9.43	27.31	34.29	22.81	19.58	4.02E-04	0.05	0.05	341,422.48
PSD Significance Threshold		25	15	10	40	40	40	100	0.6	10	10	75,000
PSD Significant?		No	No	No	No	No	No	No	No	No	No	No

^(a) CO₂e is carbon dioxide equivalent, calculated according to 40 CFR 98 Equation A-1:

$$CO_2e = \sum_{i=1}^n GHG_i \times GWP_i$$

where GHG_i = annual mass emissions of greenhouse gas i (short tons/year)
GWP_i = global warming potential of greenhouse gas i from the table below

Pollutant	GWP (100 year)
CO ₂	1
N ₂ O	298
CH ₄	25

^(b) A June 23, 2014 decision by the U.S. Supreme Court, in *Utility Air Regulatory Group v. EPA*, rules that PSD for greenhouse gas (GHG) emissions need only be considered when permitting already triggers PSD permitting for one of the convention PSD pollutants.

Table C-35
Monroe Energy, LLC - Trainer, PA Refinery
NNSR Applicability Assessment Summary

Emission Unit		Project Related Emissions Increase (tpy)				
		PM _{2.5} NNSR			Ozone NNSR	
		PM _{2.5}	SO ₂	NO _x	NO _x	VOC
ULSG Affected Sources and New Sources						
34	Boiler 9	3.37	0.00	0.10	0.10	0.19
35	Boiler 10	1.85	0.95	0.00	0.00	0.16
102	SRU	0.07	21.06	0.62	0.62	0.08
103	Main Flare	0.00	0.00	0.00	0.00	0.00
N/A	New Feed Heaters	3.15	4.42	22.04	22.04	3.15
N/A	New Cooling Tower	0.16	-	-	-	6.02
N/A	Additional Fugitive Emissions	-	-	-	-	5.13
Project Emissions Increases		8.60	26.43	22.76	22.76	14.73
Crude Throughput Project Affected Sources						
101	FCC Unit	0.00	0.00	0.00	0.00	0.00
733	FCCU Feed Heater	0.00	0.00	0.00	0.00	0.00
735	Kerosene/HCN HTU Feed Heater	0.00	0.00	0.00	0.00	0.00
736	Diesel HTU Heater	0.00	0.00	0.00	0.00	0.01
741	D2/VGO Hydrotreater Feed Heater	0.00	0.00	0.00	0.00	0.00
737	Naphtha HDS Heater	0.06	0.06	0.00	0.00	0.04
738	Platformer Feed Heater	0.78	0.81	11.53	11.53	0.56
739	Isocracker 1st Stage Heater	0.00	0.00	0.00	0.00	0.00
740	Isocracker Splitter Reboiler	0.00	0.00	0.00	0.00	0.00
742	VCD 541 VAC Heater	0.00	0.00	0.00	0.00	0.00
743	VCD 542 VAC Heater	0.00	0.00	0.00	0.00	0.00
746	VCD 544 VAC Heater	0.00	0.00	0.00	0.00	0.00
744	ACD 543 Crude Heater	0.00	0.00	0.00	0.00	0.00
745	ACD 544 Crude Heater	0.00	0.00	0.00	0.00	0.00
165	Tank 93	-	-	-	-	0.00
166	Tank 94	-	-	-	-	0.00
126	Tank 95	-	-	-	-	0.00
127	Tank 96	-	-	-	-	0.00
137	Tank 152	-	-	-	-	4.83
138	Tank 153	-	-	-	-	0.00
140	Tank 155	-	-	-	-	0.00
142	Tank 157	-	-	-	-	0.00
300	Tank 158 (Source ID 193)	-	-	-	-	0.00
143	Tank 159	-	-	-	-	0.00
194	Tank 160	-	-	-	-	0.00
144	Tank 161	-	-	-	-	0.00
145	Tank 162	-	-	-	-	0.00
146	Tank 163	-	-	-	-	0.00
147	Tank 164	-	-	-	-	0.00
148	Tank 165	-	-	-	-	0.00
149	Tank 166	-	-	-	-	0.00
150	Tank 168	-	-	-	-	2.65
152	Tank 170	-	-	-	-	0.00
155	Tank 174	-	-	-	-	0.00
156	Tank 175	-	-	-	-	0.00
157	Tank 178	-	-	-	-	0.00
160	Tank 181	-	-	-	-	0.00
161	Tank 182	-	-	-	-	0.00
163	Tank 185	-	-	-	-	0.00
164	Tank 186	-	-	-	-	0.00
Project Emissions Increases		0.83	0.87	11.53	11.53	8.08
Total Project Emissions Increases		9.43	27.31	34.29	34.29	22.81
NNSR Significance Threshold		10	40	40	25	25
NNSR Significant?		No	No	No	No	No

1/20dc
carefully

?

1/20dc
from 10/20/2016

yes

Table C-36
Monroe Energy, LLC - Trainer, PA Refinery
Contemporaneous Emission Increases/Decreases

Date ^(a)	Plan Approval/ RFD	Description	Note	Emission Increase/Decrease	
				NO _x	VOC
				(tpy)	
10/03/2006	23-0003I	Two New Boilers		23.70	2.60
05/04/2007	23-0003J	Clean Fuel Project	(b)	39.00	0.00
10/19/2007	23-0003K	Modification to PA 23-0003G		21.89	0.00
10/23/2008	23-0003M	Cooling Tower		0.00	0.74
12/08/2008	23-0003N	FCCU Feed Heater Modification		0.00	(1.10)
02/09/2009	23-0003O	ReVAP	(c)		
04/10/2009	23-0003P	2010 Turnaround		1.59	0.26
09/28/2009	23-0003Q	Boiler MACT Phase II Application		0.00	0.00
12/04/2009	RFD	Light Components Loading		0.07	0.14
12/23/2009	23-0003R	Aromatic Saturation Unit Project	(c)		
10/01/2010	23-0003S	Flare Gas Recovery Project		0.00	3.58
10/01/2010	23-0003T	Amended Alky ReVAP Project	(c)		
11/09/2011	23-0003U	Two New Boilers (Replace Boiler 8)(withdrawn)			
04/12/2012	23-0003V	Diesel Heater Project	(c)		
08/09/2012	RFD	Main Flare - Turnaround		0.00	0.09
01/10/2013	RFD #3418	Propane Loading into Trucks		0.00	0.00
04/04/2013	RFD #3561	Peabody Heater Modifications		0.00	0.00
04/23/2013	RFD #3596	Max Jet		0.00	0.21
05/17/2013	23-0003W	D2 Project	(d)	0.00	3.44
03/13/2014	23-0003X	400 kW Emergency Generator	(e)	1.19	0.01
10/14/2014	23-0003Y	Proposed Boiler 13 (Replace Boiler 8)		11.70	1.98
Total Contemporaneous Emission Increases with Proposed Boiler 13				117.14	0.00
Total Contemporaneous Emission Reduction Credits Required				(f)	152.28
Total Emission Reduction Credits Previously Provided with PA 23-0003X				(g)	(146.20)
Net Emission Reduction Credits Required/Provided with PA 23-0003Y				(h)	6.08
TBD				(i)	1.44
TBD	23-0003Z	Proposed Cooling Tower Project			67.38
TBD	TBD	Proposed Flare PAA		1.60	0.09
TBD	TBD	Proposed ULSG PAA		34.29	22.81
5-year Aggregation				37.33	22.90
10-year Aggregation				37.33	22.90
Significance Level				25	25
Total Emission Reduction Credits Required ^(j)				49	N/A

Notes:

^(a) Based on net emission increases occurring over a 10-year period.

^(b) This application modified an existing Plan Approval No. 23-0003E.

^(c) Application/Plan Approval was withdrawn.

^(d) Project triggered NNSR for VOC, 40 tons of VOC ERCs were purchased, cumulative contemporaneous emissions increase reset back to zero.

^(e) Project triggered NNSR for NO_x, 147.6 tons of NO_x ERCs were purchased, cumulative contemporaneous emissions increase reset back to zero with an additional 1.4 tons available for future use.

^(f) At an offset ratio of 1.3:1 per 25 Pa. Code § 127.210.

^(g) Application/Plan Approval 23-0003U was withdrawn and desired back-up capacity now being replaced with proposed Boiler 13. Aggregate NO_x ERCs required is reduced accordingly for those already provided under PA 23-0003X, per conversations with Virendra Trivedi (PADEP) on July 10, 2014.

^(h) Project triggered NNSR for NO_x, 6.08 tons of NO_x ERCs were purchased, cumulative contemporaneous emission increase reset back to zero.

⁽ⁱ⁾ Project triggered NNSR for VOC, 69.39 tons of VOC ERCs were purchased, cumulative contemporaneous emission increase reset back to zero.



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHEAST REGIONAL OFFICE - NORRISTOWN

2 East Main Street
Norristown, PA 19401

MEETING LOG

Date: 4/11/16Subject: Monroe Energy - Tier 3 Project

Programs Attending:

☒ RD ☒ AQ ☐ BUS ☐ CRC ☐ CW ☐ ECB ☐ ER ☐ RP ☐ SDW ☐ WAW ☐ WM

NAME	TITLE	PROGRAM/COMPANY	PHONE #	E-MAIL
Sachin Shankar	ARD	PA-DEP	484-250-5940	sshankar@pa.gov
Matt Torell	Environmental Leader	Monroe	610 772 6633	matt.torell@monroe-energy.com
HALEY ILG	AIR PERMIT COMP. LEAD	MONROE	267 358 8765	haley.ilg@monroe-energy.com
Meghan Barber	Consulting Engineer	All4 Inc.	610-933-5246 ext. 130	mbarber@all4inc.com
Bill McEnroe	HSB's Leader	Monroe	610-364-8525	bill.mcenroe@monroe-eng.co
Gregory Go	Environmental Eng Specialist	PA-DEP	484-250-5062	ggo@pa.gov
James A. Beach	EEM ASB Section	PA-DEP	484-250-7501	jamesbeach@pa.gov
DAVID Campbell	EPA		215 514 2196	
Gerallyn Duke	EPA		215 514 2084	duke.gerallyn@epa.gov
James Reborchak	PADEP-AQ PM	PA-DEP	484 250-5074	jreborchak@pa.gov

EPA Comments on
Draft Plan Approval 23-0003AB
Monroe Energy

This plan approval is for a project to meet US Tier 3 Motor Vehicle Emission and Fuel Standards at the Monroe Energy petroleum refinery located in Trainer, Pennsylvania. Key parts of the project entail purchase and relocation of the low sulfur gasoline process (a hydrotreater) from the former Sunoco refinery in Trainer and replacement of the existing FCC naptha splitter with this relocated unit. Reactor trains will be affected by this reconfiguration and will result in increased production of 1,500 BPD of naptha, a “small” increase in ULSD production, and debottlenecking/possible modification of numerous units that ultimately produce emissions to be controlled at the USLG unit. New units will include a new cooling tower with drift eliminators and two refinery fuel gas-fired process heaters rated at 99.6 and 44.2 MMBtu/hr; all burners will be equipped with low-NO_x burners.

Significant comments are highlighted.

1. NSR Applicability determination
 - a. Please provide the documentation that shows how BAE for PM, PM₁₀, PM_{2.5}, NO₂, VOCs, and CO were identified. BAE should represent actual emissions, using CEMs, PEMs, emissions factors from stack tests, etc.
 - b. Please provide the relevant information specified in 40 CFR 52.21(b)(41)(ii) and 25 PA Code 127.203a(a)(5)(i)(A) to demonstrate the level of business activity that will result in projected actual emissions (PAE) for the ten years (because design capacity is increasing) following the project. Also, please identify the emissions factors to be used after the change for each pollutant analyzed in the applicability determinations for NNSR and PSD, and explain how the post-change emissions factors were derived.
 - c. To determine emissions that could have been accommodated, highest monthly emissions rates for each pollutant during the baseline periods were annualized. No consideration was afforded that the product after the change will not be the same project as before the change. No emissions associated with the fuels that are desulfurized through the new low sulfur gasoline process unit may be accommodated, as they could not be produced prior to the change.
2. Emissions caps are proposed for source IDs 747 (reactor effluent heater H-124-01) and 748 (stripper reboiler heater H-124-02). Unless the cap is removed, please insert the following language, which EPA and PADEP have previously agreed upon where caps (and not PALs) are use in plan approvals, for both units:

This emissions cap does not provide any relief from obtaining a plan approval for any future physical change or change in the method of operation of either of the heaters, or the addition or modification of any steam-consuming processes at the facility. Future applicability determinations must consider the baseline actual emissions of the

emissions units and not the cap. The latter is true even if the company does not request a change in the compliance cap. Furthermore, by accepting this cap and agreeing to consider the two heaters as one emissions unit for NSR/PSD purposes, any future applicability determinations must involve both heaters, e.g. should major NSR/PSD be triggered for any one heater or process change, BACT/LAER is required for both heaters.

3. Conditions #009 and #013 on page 14 of the plan approval require monitoring and recordkeeping on a monthly and 12-month rolling basis, yet Condition #006 sets NO_x emissions limits on a daily basis.
4. Conditions #022 and #023 on page 27 – Reports should be sent to the Associate Director, Office of Air Enforcement and Compliance, 3AP20 at the address listed.
5. Condition #002 on pages 45 and 46 – We recommend that the plan approval (or at least the review memo) include the actual equations to be used in calculating VOC and PM_{2.5} emissions.

Prepared by
Geraldyn Duke
Office of Permits and State Programs 3AP10
March 8, 2016

REVISED JANUARY 13, 2016

Table C-1
Monroe Energy, LLC - Trainer, PA Refinery
PSD Baseline Actual Emission Rates

Emission Unit		Emission Rate (tpy)														
		PM	PM ₁₀	PM _{2.5}	SO ₂	NO ₂	VOC	CO	Lead	H ₂ S	TRS	CO ₂	N ₂ O	CH ₄	Total GHG	CO ₂ e ^(*)
101	FCC Unit	43.06	63.93	41.79	28.86	233.46	3.15	15.63	2.47E-04	-	-	499,375.51	2.93	14.67	499,393.10	500,614.22
733	PCCU Feed Heater	0.10	0.42	0.58	0.62	2.56	0.42	0.93	3.73E-05	0.01	0.01	16,695.75	0.17	0.85	16,696.77	16,767.57
735	Kerosene/HCN HTU Feed Heater	0.22	0.36	0.30	0.33	5.36	0.22	3.23	1.82E-05	2.74E-03	2.77E-03	4,319.92	0.04	0.22	4,320.18	4,338.50
736	Diesel HTU Heater	0.24	0.42	0.48	0.55	11.74	0.20	3.49	3.35E-05	0.01	0.01	13,802.45	0.14	0.70	13,803.30	13,861.83
741	D2/VGO Hydrocracker Feed Heater	0.43	0.33	0.20	0.72	9.04	0.50	7.44	4.78E-05	0.01	0.01	23,209.06	0.24	1.18	23,210.47	23,368.50
737	Naphtha HDS Heater	1.19	1.87	1.92	2.01	25.95	1.39	20.86	1.22E-04	0.02	0.02	33,037.72	0.34	1.68	33,039.73	33,179.83
738	Platformer Feed Heater	8.45	13.44	13.90	14.58	148.25	10.06	1.57	9.42E-04	0.19	0.19	284,157.46	2.89	14.45	284,174.80	285,379.82
739	Isocracker 1st Stage Heater	0.55	0.96	1.01	1.06	15.96	0.73	11.21	6.49E-05	0.01	0.01	14,711.55	0.15	0.75	14,712.45	14,774.84
740	Isocracker Splitter Reboiler	0.69	1.19	1.21	1.27	15.94	0.88	13.38	7.83E-05	0.01	0.01	18,382.52	0.19	0.93	18,383.64	18,461.59
742	VCD 541 VAC Heater	0.18	0.71	0.70	0.76	12.75	0.50	7.34	4.31E-05	0.01	0.01	13,793.59	0.14	0.70	13,794.44	13,852.93
743	VCD 542 VAC Heater	0.44	0.78	0.70	0.76	12.75	0.50	7.34	4.31E-05	0.01	0.01	13,793.59	0.14	0.70	13,794.44	13,852.93
746	VCD 544 VAC Heater	1.35	2.88	2.77	2.34	12.49	2.11	1.34	1.40E-04	0.02	0.02	35,464.65	0.36	1.80	35,466.81	35,617.21
744	ACD 543 Crude Heater	4.32	7.22	7.36	8.04	39.50	5.33	81.32	4.82E-04	0.09	0.09	143,860.54	1.46	7.31	143,869.31	144,479.38
745	ACD 544 Crude Heater	4.68	7.59	7.60	8.30	44.94	5.50	83.63	4.91E-04	0.09	0.09	145,398.35	1.48	7.39	145,407.22	146,023.81
34	Boiler 9	0.53	1.69	0.55	1.66	4.16	0.04	1.17	4.51E-04	0.06	0.06	72,880.82	0.14	1.37	72,882.33	72,956.09
35	Boiler 10	0.38	1.06	0.46	1.58	3.90	0.03	8.72	4.32E-04	0.06	0.06	83,481.92	0.16	1.57	83,483.65	83,568.14
102	SRU	0.10	0.38	0.32	18.24	4.33	0.23	3.56	2.04E-05	0.00	-	2,852.70	0.06	5.88E-03	2,852.76	2,870.38
103	Main Flare	4.05	5.64	5.04	11.13	9.99	20.56	58.11	1.14E-04	14.23	-	51,382.53	0.96	8.75	51,392.24	51,887.23
165	Tank 93	-	-	-	-	-	-	4.59	-	-	-	-	-	-	-	-
166	Tank 94	-	-	-	-	-	-	1.96	-	-	-	-	-	-	-	-
126	Tank 95	-	-	-	-	-	-	2.44	-	-	-	-	-	-	-	-
127	Tank 96	-	-	-	-	-	-	3.37	-	-	-	-	-	-	-	-
137	Tank 152	-	-	-	-	-	-	2.34	-	-	-	-	-	-	-	-
138	Tank 153	-	-	-	-	-	-	0.16	-	-	-	-	-	-	-	-
140	Tank 155	-	-	-	-	-	-	0.13	-	-	-	-	-	-	-	-
142	Tank 157	-	-	-	-	-	-	0.15	-	-	-	-	-	-	-	-
300	Tank 158 (Source ID 193)	-	-	-	-	-	-	1.06	-	-	-	-	-	-	-	-
143	Tank 159	-	-	-	-	-	-	4.08	-	-	-	-	-	-	-	-
194	Tank 160	-	-	-	-	-	-	4.69	-	-	-	-	-	-	-	-
144	Tank 161	-	-	-	-	-	-	2.68	-	-	-	-	-	-	-	-
145	Tank 162	-	-	-	-	-	-	0.64	-	-	-	-	-	-	-	-
146	Tank 163	-	-	-	-	-	-	1.82	-	-	-	-	-	-	-	-
147	Tank 164	-	-	-	-	-	-	1.88	-	-	-	-	-	-	-	-
148	Tank 165	-	-	-	-	-	-	2.23	-	-	-	-	-	-	-	-
149	Tank 166	-	-	-	-	-	-	2.89	-	-	-	-	-	-	-	-
150	Tank 168	-	-	-	-	-	-	1.69	-	-	-	-	-	-	-	-
152	Tank 170	-	-	-	-	-	-	4.21	-	-	-	-	-	-	-	-
155	Tank 174	-	-	-	-	-	-	3.99	-	-	-	-	-	-	-	-
156	Tank 175	-	-	-	-	-	-	6.36	-	-	-	-	-	-	-	-
157	Tank 178	-	-	-	-	-	-	3.53	-	-	-	-	-	-	-	-
160	Tank 181	-	-	-	-	-	-	2.24	-	-	-	-	-	-	-	-
161	Tank 182	-	-	-	-	-	-	4.38	-	-	-	-	-	-	-	-
163	Tank 185	-	-	-	-	-	-	8.82	-	-	-	-	-	-	-	-
164	Tank 186	-	-	-	-	-	-	5.54	-	-	-	-	-	-	-	-
Total Baseline Emissions (tons/24 months)		141.92	220.54	173.78	204.95	1,208.71	259.48	645.90	7.58E-03	29.70	1.25	2,949,157	23.95	129.63	2,949,310.23	2,959,534.50
Total Baseline Actual Emissions		70.96	110.27	86.89	102.47	604.35	129.74	322.95	3.79E-03	14.85	0.62	1,474,578	11.98	64.81	1,474,655.12	1,479,767.25
Baseline Period		Aug-13	Aug-13	Feb-13	Feb-13	Feb-13	Feb-13	Jan-13	Nov-12	Jan-09	Apr-09	Jun-09	Jun-09	Jun-09	Jun-09	Jun-09
		Jul-15	Jul-15	Jan-15	Jan-15	Jan-15	Jan-15	Dec-14	Oct-14	Dec-10	Mar-11	May-11	May-11	May-11	May-11	May-11

* CO₂e is carbon dioxide equivalent, calculated according to 40 CFR 98 Equation A-1:

$$CO_2e = \sum_{i=1}^n GHG_i \times GWP_i$$

where GHG_i = annual mass emissions of greenhouse gas i (short tons/year)
GWP_i = global warming potential of greenhouse gas i from the table below

Pollutant	GWP (100 year)
CO ₂	1
N ₂ O	298
CH ₄	25

Table C-2
Monroe Energy, LLC - Trainer, PA Refinery
NNSR Baseline Actual Emission Rates

Emission Unit		Emission Rate (tpy)				
		PM _{2.5} NNSR			Ozone NNSR	
		PM _{2.5}	SO ₂	NO _x	NO _x	VOC
101	FCC Unit	41.79	28.86	233.46	233.46	3.15
733	FCCU Feed Heater	0.58	0.62	2.56	2.56	0.42
735	Kerosene/HCN HTU Feed Heater	0.30	0.33	5.36	5.36	0.22
736	Diesel HTU Heater	0.48	0.55	11.74	11.74	0.20
741	D2/VGO Hydrotreater Feed Heater	0.20	0.72	9.04	9.04	0.50
737	Naphtha HDS Heater	1.92	2.01	25.95	25.95	1.39
738	Platformer Feed Heater	13.90	14.58	148.25	148.25	10.06
739	Isocracker 1st Stage Heater	1.01	1.06	15.96	15.96	0.73
740	Isocracker Splitter Reboiler	1.21	1.27	15.94	15.94	0.88
742	VCD 541 VAC Heater	0.70	0.76	12.75	12.75	0.50
743	VCD 542 VAC Heater	0.70	0.41	4.02	4.02	0.02
746	VCD 544 VAC Heater	2.77	2.34	12.49	12.49	2.11
744	ACD 543 Crude Heater	7.36	8.04	39.50	39.50	5.33
745	ACD 544 Crude Heater	7.60	8.30	44.94	44.94	5.50
34	Boiler 9	0.55	1.66	4.16	4.16	0.04
35	Boiler 10	0.46	1.58	3.90	3.90	0.03
102	SRU	0.32	18.24	4.33	4.33	0.23
103	Main Flare	5.04	11.13	9.99	9.99	20.56
165	Tank 93	-	-	-	-	4.59
166	Tank 94	-	-	-	-	1.96
126	Tank 95	-	-	-	-	2.44
127	Tank 96	-	-	-	-	3.37
137	Tank 152	-	-	-	-	2.34
138	Tank 153	-	-	-	-	0.16
140	Tank 155	-	-	-	-	0.13
142	Tank 157	-	-	-	-	0.15
300	Tank 158 (Source ID 193)	-	-	-	-	1.06
143	Tank 159	-	-	-	-	4.08
194	Tank 160	-	-	-	-	4.69
144	Tank 161	-	-	-	-	2.68
145	Tank 162	-	-	-	-	0.64
146	Tank 163	-	-	-	-	1.82
147	Tank 164	-	-	-	-	1.88
148	Tank 165	-	-	-	-	2.23
149	Tank 166	-	-	-	-	2.89
150	Tank 168	-	-	-	-	1.69
152	Tank 170	-	-	-	-	4.21
155	Tank 174	-	-	-	-	3.99
156	Tank 175	-	-	-	-	6.36
157	Tank 178	-	-	-	-	3.53
160	Tank 181	-	-	-	-	2.24
161	Tank 182	-	-	-	-	4.38
163	Tank 185	-	-	-	-	8.82
164	Tank 186	-	-	-	-	5.54
Total Baseline Emissions (tons/24 months)		173.78	204.95	1,208.71	1,208.71	259.48
Total Baseline Actual Emissions		86.89	102.47	604.35	604.35	129.74
Baseline Period		Feb-13	Feb-13	Feb-13	Feb-13	Feb-13
		Jan-15	Jan-15	Jan-15	Jan-15	Jan-15

REVISED JANUARY 13, 2016

Table C-31
Monroe Energy, LLC - Trainer, PA Facility
Projected Future Actual Emissions

Emission Unit		Emission Rate (tpy)										
		PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	VOC	CO	Lead	H ₂ S	TRS	CO ₂ e ^(a)
101	FCC Unit	84.62	110.60	96.21	88.82	432.52	3.20	16.35	-	-	-	756,643.87
733	FCCU Feed Heater	0.18	0.72	0.72	0.78	3.02	0.52	7.93	4.72E-05	8.56E-03	8.56E-03	13,159.88
735	Kerosene/HCN HTU Feed Heater	0.06	0.25	0.25	0.28	4.51	0.18	2.81	1.67E-05	3.09E-03	3.09E-03	4,749.00
736	Diesel HTU Heater	0.11	0.62	0.62	0.67	13.84	0.39	0.18	4.05E-05	7.45E-03	7.45E-03	11,443.37
741	D2/VGO Hydrotreater Feed Heater	0.15	0.59	0.59	0.61	7.71	0.42	6.48	3.86E-05	6.70E-03	6.70E-03	10,299.04
737	Naphtha HDS Heater	0.61	2.43	2.43	2.55	33.29	1.76	26.88	1.60E-04	0.03	0.03	43,484.82
738	Platformer Feed Heater	4.06	16.23	16.23	17.03	185.70	11.75	0.15	1.07E-03	0.18	0.18	282,079.15
739	Isocracker 1st Stage Heater	0.26	1.03	1.03	1.08	16.77	0.75	11.43	6.80E-05	0.01	0.01	18,881.57
740	Isocracker Splitter Reboiler	0.34	1.37	1.37	1.44	18.05	0.99	15.17	9.03E-05	0.02	0.02	25,175.42
742	VCD 541 VAC Heater	0.27	1.06	1.06	1.16	20.50	0.77	11.76	7.00E-05	0.01	0.01	20,598.07
743	VCD 542 VAC Heater	0.15	0.62	0.62	0.67	6.75	0.03	0.02	4.06E-05	7.45E-03	7.45E-03	11,443.37
746	VCD 544 VAC Heater	0.55	2.19	2.19	2.39	12.44	2.18	5.29	1.44E-04	0.03	0.03	40,623.97
744	ACD 543 Crude Heater	2.01	8.02	8.02	8.77	45.55	5.81	88.66	5.28E-04	0.10	0.10	148,763.85
745	ACD 544 Crude Heater	2.00	8.01	8.01	8.75	50.11	5.80	88.55	5.27E-04	0.10	0.10	148,763.85
34	Boiler 9	0.72	5.69	5.07	1.04	4.41	0.31	1.34	4.80E-04	0.09	0.09	115,912.86
35	Boiler 10	0.40	3.07	2.97	2.97	3.93	0.27	4.93	4.60E-04	0.08	0.08	110,997.52
102	SRU	0.11	0.44	0.44	40.33	5.83	0.32	4.90	2.92E-05	0.00	-	31,828.54
103	Main Flare	1.25	1.74	1.74	4.15	3.15	6.48	17.13	2.14E-04	2.47	-	6,365.71
165	Tank 93	-	-	-	-	-	1.92	-	-	-	-	-
166	Tank 94	-	-	-	-	-	2.76	-	-	-	-	-
126	Tank 95	-	-	-	-	-	3.46	-	-	-	-	-
127	Tank 96	-	-	-	-	-	4.45	-	-	-	-	-
137	Tank 152	-	-	-	-	-	5.06	-	-	-	-	-
138	Tank 153	-	-	-	-	-	0.19	-	-	-	-	-
140	Tank 155	-	-	-	-	-	0.18	-	-	-	-	-
142	Tank 157	-	-	-	-	-	0.21	-	-	-	-	-
300	Tank 158 (Source ID 193)	-	-	-	-	-	13.15	-	-	-	-	-
143	Tank 159	-	-	-	-	-	3.97	-	-	-	-	-
154	Tank 160	-	-	-	-	-	0.22	-	-	-	-	-
144	Tank 161	-	-	-	-	-	6.04	-	-	-	-	-
145	Tank 162	-	-	-	-	-	3.25	-	-	-	-	-
146	Tank 163	-	-	-	-	-	4.25	-	-	-	-	-
147	Tank 164	-	-	-	-	-	3.79	-	-	-	-	-
148	Tank 165	-	-	-	-	-	8.26	-	-	-	-	-
149	Tank 166	-	-	-	-	-	3.55	-	-	-	-	-
150	Tank 168	-	-	-	-	-	2.89	-	-	-	-	-
152	Tank 170	-	-	-	-	-	6.13	-	-	-	-	-
155	Tank 174	-	-	-	-	-	12.01	-	-	-	-	-
156	Tank 175	-	-	-	-	-	7.43	-	-	-	-	-
157	Tank 178	-	-	-	-	-	3.23	-	-	-	-	-
160	Tank 181	-	-	-	-	-	8.75	-	-	-	-	-
161	Tank 182	-	-	-	-	-	20.53	-	-	-	-	-
163	Tank 185	-	-	-	-	-	11.26	-	-	-	-	-
164	Tank 186	-	-	-	-	-	5.47	-	-	-	-	-
N/A	New Feed Heaters	3.15	3.15	3.15	4.42	22.04	3.15	17.08	2.66E-04	-	-	-
N/A	New Cooling Tower	0.16	0.16	0.16	-	-	6.02	-	-	-	-	-
N/A	Additional Fugitive Emissions	-	-	-	-	-	5.13	-	-	-	-	-
Total Projected Future Actual Emissions		101.14	168.00	152.89	187.93	890.12	198.63	327.01	4.29E-03	3.15	0.68	1,801,213.86

^(a) CO₂e is carbon dioxide equivalent calculated according to 40 CFR 98 Equations A-1

$$CO_2e = \sum_{i=1}^n GHG_i \times GWP_i$$

where GHG_i = annual mass emissions of greenhouse gas i (short tons/year)
GWP_i = global warming potential of greenhouse gas i from the table below

Pollutant	GWP (100 year)
CO ₂	1
N ₂ O	298
CH ₄	25

UNSR BAE

87	102	604	130
66*	85*	286*	69*
PM _{2.5}	SO ₂	NO _x	VOC

[illegible]

Table C-32
Monroe Energy, LLC - Trainer, PA Refinery
Emissions Which Could Have Been Accommodated (CHA)

REVISÉD JANUARY 13, 2016

Table C-32
Montrose Energy, LLC - Trainee, PA Refinery
Emissions Which Could Have Been Accommodated (CHA)

Emission Unit												
PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	VOC	CO	Lead	H ₂ S	THS	CO ₂	N ₂ O	CH ₄
Emission Rate (tpy)												
Total Capacity of Accommodating Emissions												
Baseline Period												
191	Tank 160	Highest Emitting Month	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
		Monthly Emissions										
		Annualized Emissions (CHA)										
141	Tank 161	Highest Emitting Month	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
		Monthly Emissions										
		Annualized Emissions (CHA)										
145	Tank 162	Highest Emitting Month	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
		Monthly Emissions										
		Annualized Emissions (CHA)										
146	Tank 163	Highest Emitting Month	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
		Monthly Emissions										
		Annualized Emissions (CHA)										
147	Tank 164	Highest Emitting Month	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41
		Monthly Emissions										
		Annualized Emissions (CHA)										
148	Tank 165	Highest Emitting Month	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79
		Monthly Emissions										
		Annualized Emissions (CHA)										
149	Tank 166	Highest Emitting Month	20.33	20.33	20.33	20.33	20.33	20.33	20.33	20.33	20.33	20.33
		Monthly Emissions										
		Annualized Emissions (CHA)										
149	Tank 166	Highest Emitting Month	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
		Monthly Emissions										
		Annualized Emissions (CHA)										
150	Tank 168	Highest Emitting Month	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06
		Monthly Emissions										
		Annualized Emissions (CHA)										
152	Tank 170	Highest Emitting Month	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43
		Monthly Emissions										
		Annualized Emissions (CHA)										
155	Tank 174	Highest Emitting Month	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
		Monthly Emissions										
		Annualized Emissions (CHA)										
156	Tank 175	Highest Emitting Month	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
		Monthly Emissions										
		Annualized Emissions (CHA)										
157	Tank 178	Highest Emitting Month	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91	7.91
		Monthly Emissions										
		Annualized Emissions (CHA)										
160	Tank 181	Highest Emitting Month	5.85	5.85	5.85	5.85	5.85	5.85	5.85	5.85	5.85	5.85
		Monthly Emissions										
		Annualized Emissions (CHA)										
161	Tank 182	Highest Emitting Month	3.29	3.29	3.29	3.29	3.29	3.29	3.29	3.29	3.29	3.29
		Monthly Emissions										
		Annualized Emissions (CHA)										
163	Tank 185	Highest Emitting Month	39.43	39.43	39.43	39.43	39.43	39.43	39.43	39.43	39.43	39.43
		Monthly Emissions										
		Annualized Emissions (CHA)										
164	Tank 186	Highest Emitting Month	11.81	11.81	11.81	11.81	11.81	11.81	11.81	11.81	11.81	11.81
		Monthly Emissions										
		Annualized Emissions (CHA)										
164		Monthly Emissions	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
169	Aug-13	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
170	Jul-15	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
171	Aug-13	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
172	Jul-15	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
173	Aug-13	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
174	Jul-15	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
175	Aug-13	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
176	Jul-15	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
177	Aug-13	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
178	Jul-15	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
179	Aug-13	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
180	Jul-15	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
181	Aug-13	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
182	Jul-15	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
183	Aug-13	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
184	Jul-15	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
185	Aug-13	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
186	Jul-15	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
187	Aug-13	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
188	Jul-15	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
189	Aug-13	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
190	Jul-15	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
191	Aug-13	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
192	Jul-15	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
193	Aug-13	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
194	Jul-15	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
195	Aug-13	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
196	Jul-15	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
197	Aug-13	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
198	Jul-15	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
199	Aug-13	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567
200	Jul-15	146.78	206.63	180.49	204.72	967.62	287.74	513.77	0.01	19.03	0.77	1.771,567

REVISED JANUARY 13, 2016

Table C-33
Monroe Energy, LLC - Trainer, PA Refinery
Project Emission Increases Summary

Source		Pollutant	Projected Actual Emissions (PAE)	Baseline Actual Emissions (BAE)	Emission Increases (PAE - BAE)	Emissions Which Could Have Been Accommodated (CHA)	Excludable Emissions (CHA - BAE)	Total Project Emission Increases (PAE - Excludable - BAE)
tons/yr								
101	FCC Unit	PM	84.62	43.06	41.56	93.30	50.24	0.00
		PM ₁₀	110.60	63.93	46.66	140.78	76.84	0.00
		PM _{2.5}	96.21	41.79	54.43	112.69	70.91	0.00
		SO ₂	88.82	28.85	59.96	95.25	66.39	0.00
		NO _x	432.52	233.46	199.06	454.41	220.95	0.00
		VOC	3.20	3.15	0.05	3.26	0.11	0.00
		CO	16.35	15.63	0.71	35.45	19.82	0.00
		Lead	-	2.47E-04	-	4.18E-04	1.71E-04	-
		Fluorides	0.00	0.00	0.00	0.00	0.00	0.00
		H ₂ SO ₄	0.00	0.00	0.00	0.00	0.00	0.00
		H ₂ S	-	-	-	0.00	-	-
		TRS	-	-	-	0.00	-	-
		CO ₂	754,773.34	499,375.51	255,397.83	560,274.64	60,899.13	194,498.70
		N ₂ O	4.42	2.93	1.50	3.28	0.36	1.14
		CH ₄	22.11	14.67	7.44	16.46	1.79	5.65
		PM	0.18	0.10	0.08	0.38	0.28	0.00
733	FCCU Feed Heater	PM ₁₀	0.72	0.42	0.30	1.52	1.10	0.00
		PM _{2.5}	0.72	0.58	0.13	1.52	0.94	0.00
		SO ₂	0.78	0.62	0.16	1.66	1.04	0.00
		NO _x	3.02	2.56	0.46	6.67	4.11	0.00
		VOC	0.52	0.42	0.10	1.10	0.68	0.00
		CO	7.93	0.93	7.00	11.29	10.36	0.00
		Lead	4.72E-05	3.73E-05	9.89E-06	9.99E-05	6.26E-05	0.00
		Fluorides	0.00	0.00	0.00	0.00	0.00	0.00
		H ₂ SO ₄	0.00	0.00	0.00	0.00	0.00	0.00
		H ₂ S	8.56E-03	0.01	0.00	0.02	8.85E-03	0.00
		TRS	8.56E-03	0.01	0.00	0.02	0.01	0.00
		CO ₂	13,103.51	16,695.75	0.00	34,001.33	17,305.58	0.00
		N ₂ O	0.13	0.17	0.00	0.35	0.18	0.00
		CH ₄	0.67	0.85	0.00	1.73	0.88	0.00
		PM	0.06	0.32	0.00	0.47	0.25	0.00
		PM ₁₀	0.25	0.36	0.00	0.50	0.15	0.00
735	Kerosene/HCN HTU Feed Heater	PM _{2.5}	0.25	0.30	0.00	0.48	0.18	0.00
		SO ₂	0.28	0.33	0.00	0.53	0.20	0.00
		NO _x	4.51	5.36	0.00	8.84	3.48	0.00
		VOC	0.18	0.22	0.00	0.35	0.13	0.00
		CO	2.81	3.23	0.00	5.23	2.00	0.00
		Lead	1.67E-05	1.82E-05	0.00	2.85E-05	1.03E-05	0.00
		Fluorides	0.00	0.00	0.00	0.00	0.00	0.00
		H ₂ SO ₄	0.00	0.00	0.00	0.00	0.00	0.00
		H ₂ S	3.09E-03	2.74E-03	3.54E-04	3.74E-03	1.00E-03	0.00
		TRS	3.09E-03	2.77E-03	3.22E-04	4.36E-03	1.59E-03	0.00
		CO ₂	4,728.66	4,319.92	408.74	6,671.34	2,351.42	0.00
		N ₂ O	0.05	0.04	4.16E-03	0.07	0.02	0.00
		CH ₄	0.24	0.22	0.02	0.34	0.12	0.00
		PM	0.11	0.24	0.00	0.63	0.39	0.00
		PM ₁₀	0.62	0.42	0.19	0.68	0.26	0.00
		PM _{2.5}	0.62	0.48	0.13	0.93	0.44	0.00
		SO ₂	0.67	0.55	0.12	1.01	0.47	0.00
736	Diesel HTU Heater	NO _x	13.84	11.74	2.10	22.76	11.03	0.00
		VOC	0.39	0.20	0.19	0.67	0.47	0.00
		CO	0.18	3.49	0.00	10.87	7.38	0.00
		Lead	4.05E-05	3.35E-05	6.98E-06	6.47E-05	3.12E-05	0.00
		Fluorides	0.00	0.00	0.00	0.00	0.00	0.00
		H ₂ SO ₄	0.00	0.00	0.00	0.00	0.00	0.00
		H ₂ S	7.45E-03	9.06E-03	0.00	0.01	2.93E-03	0.00
		TRS	7.45E-03	9.24E-03	0.00	0.01	2.75E-03	0.00
		CO ₂	11,394.36	13,802.45	0.00	18,354.99	4,552.54	0.00
		N ₂ O	0.12	0.14	0.00	0.19	0.05	0.00
		CH ₄	0.58	0.70	0.00	0.93	0.23	0.00
		PM	0.15	0.43	0.00	0.79	0.36	0.00
		PM ₁₀	0.59	0.33	0.26	1.14	0.81	0.00
		PM _{2.5}	0.59	0.20	0.39	0.75	0.55	0.00
		SO ₂	0.61	0.72	0.00	1.46	0.74	0.00
		NO _x	7.71	9.04	0.00	18.34	9.30	0.00
		VOC	0.42	0.50	0.00	1.01	0.51	0.00
741	D2/VGO Hydrotreater Feed Heater	CO	6.48	7.44	0.00	15.41	7.97	0.00
		Lead	3.86E-05	4.78E-05	0.00	9.17E-05	4.39E-05	0.00
		Fluorides	0.00	0.00	0.00	0.00	0.00	0.00
		H ₂ SO ₄	0.00	0.00	0.00	0.00	0.00	0.00
		H ₂ S	6.70E-03	0.01	0.00	0.02	4.27E-03	0.00
		TRS	6.70E-03	0.01	0.00	0.02	7.79E-03	0.00
		CO ₂	10,254.92	23,209.06	0.00	34,559.53	11,350.47	0.00
		N ₂ O	0.10	0.24	0.00	0.35	0.12	0.00
		CH ₄	0.52	1.18	0.00	1.76	0.58	0.00

11-11-16

30% yet just produced

de bottelering - do have
how different from collected

They will reuse proposed. I said
we'll expedite review

Moody ~ Denver 3 + DADP

REVISED JANUARY 13, 2016

Table C-33
Monroe Energy, LLC - Trainer, PA Refinery
Project Emission Increases Summary

Source		Pollutant	Projected Actual Emissions (PAE)	Baseline Actual Emissions (BAE)	Emission Increases (PAE - BAE)	Emissions Which Could Have Been Accommodated (CHA)	Excludable Emissions (CHA - BAE)	Total Project Emission Increases (PAE - Excludable - BAE)
tons/yr								
737	Naphtha HDS Heater	PM	0.61	1.19	0.00	2.37	1.18	0.00
		PM ₁₀	2.43	1.87	0.56	2.37	0.50	0.06
		PM _{2.5}	2.43	1.92	0.51	2.37	0.45	0.06
		SO ₂	2.55	2.01	0.54	2.49	0.48	0.06
		NO _x	33.29	25.95	7.34	37.04	11.09	0.00
		VOC	1.76	1.39	0.37	1.72	0.33	0.04
		CO	26.88	20.85	6.01	26.25	5.38	0.63
		Lead	1.60E-04	1.22E-04	3.83E-05	1.50E-04	3.45E-05	1.75E-06
		Fluorides	0.00	0.00	0.00	0.00	0.00	0.00
		H ₂ SO ₄	0.00	0.00	0.00	0.00	0.00	0.00
		H ₂ S	0.03	0.02	6.14E-03	0.03	6.98E-03	0.00
		TRS	0.03	0.02	6.68E-03	0.03	7.52E-03	0.00
		CO ₂	43,298.56	33,037.72	10,260.84	44,576.75	11,539.03	0.00
		N ₂ O	0.44	0.34	0.10	0.45	0.12	0.00
		CH ₄	2.20	1.68	0.52	2.27	0.59	0.00
		PM	4.06	8.45	0.00	15.12	6.67	0.00
738	Platformer Feed Heater	PM ₁₀	16.23	13.44	2.79	15.46	2.01	0.78
		PM _{2.5}	16.23	13.90	2.33	16.78	2.88	0.00
		SO ₂	17.03	14.58	2.45	17.60	3.02	0.00
		NO _x	185.70	148.25	37.45	191.96	43.71	0.00
		VOC	11.75	10.06	1.69	12.14	2.08	0.00
		CO	0.15	1.57	0.00	7.11	5.54	0.00
		Lead	1.07E-03	9.42E-04	1.26E-04	1.10E-03	1.61E-04	0.00
		Fluorides	0.00	0.00	0.00	0.00	0.00	0.00
		H ₂ SO ₄	0.00	0.00	0.00	0.00	0.00	0.00
		H ₂ S	0.18	0.19	0.00	0.21	0.02	0.00
		TRS	0.18	0.19	0.00	0.21	0.02	0.00
		CO ₂	280,870.92	284,157.46	0.00	319,415.38	35,257.92	0.00
		N ₂ O	2.86	2.89	0.00	3.25	0.36	0.00
		CH ₄	14.28	14.45	0.00	16.24	1.79	0.00
		PM	0.26	0.55	0.00	1.07	0.52	0.00
		PM ₁₀	1.03	0.96	0.07	1.39	0.43	0.00
PM _{2.5}	1.03	1.01	0.02	1.49	0.47	0.00		
739	Isocracker 1st Stage Heater	SO ₂	1.08	1.06	0.02	1.56	0.49	0.00
		NO _x	16.77	15.96	0.81	23.20	7.24	0.00
		VOC	0.75	0.73	0.01	1.08	0.34	0.00
		CO	11.43	11.21	0.22	16.45	5.24	0.00
		Lead	6.80E-05	6.49E-05	3.08E-06	9.76E-05	3.27E-05	0.00
		Fluorides	0.00	0.00	0.00	0.00	0.00	0.00
		H ₂ SO ₄	0.00	0.00	0.00	0.00	0.00	0.00
		H ₂ S	0.01	9.24E-03	3.04E-03	0.02	5.95E-03	0.00
		TRS	0.01	9.38E-03	2.90E-03	0.02	5.81E-03	0.00
		CO ₂	18,800.69	14,711.55	4,089.14	23,249.17	8,537.61	0.00
		N ₂ O	0.19	0.15	0.04	0.24	0.09	0.00
		CH ₄	0.56	0.75	0.21	1.18	0.43	0.00
		PM	0.34	0.69	0.00	1.50	0.81	0.00
		PM ₁₀	1.37	1.19	0.18	1.50	0.31	0.00
		PM _{2.5}	1.37	1.21	0.16	1.59	0.38	0.00
		SO ₂	1.44	1.27	0.17	1.67	0.40	0.00
740	Isocracker Splitter Reboiler	NO _x	18.05	15.94	2.11	20.92	4.98	0.00
		VOC	0.99	0.88	0.12	1.15	0.27	0.00
		CO	15.17	13.38	1.78	17.58	4.19	0.00
		Lead	9.03E-05	7.81E-05	1.20E-05	1.05E-04	2.64E-05	0.00
		Fluorides	0.00	0.00	0.00	0.00	0.00	0.00
		H ₂ SO ₄	0.00	0.00	0.00	0.00	0.00	0.00
		H ₂ S	0.02	0.01	5.29E-03	0.02	4.02E-03	1.27E-03
		TRS	0.02	0.01	4.70E-03	0.02	3.90E-03	8.04E-04
		CO ₂	25,067.59	18,382.52	6,685.07	23,836.53	5,454.01	1,231.06
		N ₂ O	0.25	0.19	0.07	0.24	0.06	0.01
		CH ₄	1.27	0.93	0.34	1.21	0.28	0.06
		PM	0.27	0.18	0.09	0.29	0.12	0.00
		PM ₁₀	1.06	0.71	0.36	1.17	0.46	0.00
		PM _{2.5}	1.06	0.70	0.37	1.03	0.33	0.04
		SO ₂	1.16	0.76	0.40	1.12	0.36	0.04
		NO _x	20.50	12.75	7.74	19.27	6.51	1.23
742	VCD 541 VAC Heater	VOC	0.77	0.50	0.27	0.74	0.24	0.03
		CO	11.76	7.34	4.41	11.34	4.00	0.41
		Lead	7.00E-05	4.31E-05	2.69E-05	6.75E-05	2.45E-05	2.46E-06
		Fluorides	0.00	0.00	0.00	0.00	0.00	0.00
		H ₂ SO ₄	0.00	0.00	0.00	0.00	0.00	0.00
		H ₂ S	0.01	9.43E-03	3.97E-03	0.01	2.88E-03	1.10E-03
		TRS	0.01	9.09E-03	4.31E-03	0.01	2.57E-03	1.74E-03
		CO ₂	20,509.84	13,793.59	6,716.25	17,844.39	4,050.79	2,665.46
		N ₂ O	0.21	0.14	0.07	0.18	0.04	0.03
		CH ₄	1.04	0.70	0.34	0.91	0.21	0.14

REVISED JANUARY 13, 2016

Table G-33
Monroe Energy, LLC - Trainer, PA Refinery
Project Emission Increases Summary

Source	Pollutant	Projected Actual Emissions (PAE)	Baseline Actual Emissions (BAE)	Emission Increases (PAE - BAE)	Emissions Which Could Have Been Accommodated (CHA)	Excludable Emissions (CHA - BAE)	Total Project Emission Increases (PAE - Excludable - BAE)
tons/yr							
743	PM	0.15	0.44	0.00	1.32	0.88	0.00
	PM ₁₀	0.62	0.78	0.00	1.32	0.53	0.00
	PM _{2.5}	0.62	0.70	0.00	1.32	0.61	0.00
	SO ₂	0.67	0.41	0.27	0.76	0.36	0.00
	NO _x	6.75	4.02	2.73	7.52	3.51	0.00
	VOC	0.03	0.02	0.01	0.03	0.01	0.00
	CO	0.02	0.01	8.67E-03	0.02	0.01	0.00
	Lead	4.05E-05	2.38E-05	1.68E-05	4.60E-05	2.22E-05	0.00
	Fluorides	0.00	0.00	0.00	0.00	0.00	0.00
	H ₂ SO ₄	0.00	0.00	0.00	0.00	0.00	0.00
	H ₂ S	7.45E-03	0.01	0.00	0.01	1.78E-03	0.00
	TRS	7.45E-03	0.01	0.00	0.01	1.78E-03	0.00
	CO ₂	11,394.36	17,771.31	0.00	20,631.05	2,859.74	0.00
	N ₂ O	0.12	0.18	0.00	0.21	0.03	0.00
	CH ₄	0.58	0.90	0.00	1.05	0.15	0.00
	PM ₁₀	0.55	1.35	0.00	3.20	1.85	0.00
746	PM	2.19	2.88	0.00	3.36	0.48	0.00
	PM ₁₀	2.19	2.77	0.00	3.36	0.59	0.00
	PM _{2.5}	2.19	2.34	0.05	2.88	0.55	0.00
	SO ₂	12.44	12.49	0.00	15.71	3.21	0.00
	NO _x	2.18	2.11	0.07	2.56	0.45	0.00
	VOC	5.29	1.34	3.95	5.41	4.07	0.00
	CO	1.44E-04	1.40E-04	4.35E-06	1.74E-04	3.41E-05	0.00
	Lead	0.00	0.00	0.00	0.00	0.00	0.00
	Fluorides	0.00	0.00	0.00	0.00	0.00	0.00
	H ₂ SO ₄	0.00	0.00	0.00	0.00	0.00	0.00
	H ₂ S	0.03	0.02	2.82E-03	0.03	6.33E-03	0.00
	TRS	0.03	0.02	3.19E-03	0.03	6.71E-03	0.00
	CO ₂	40,449.97	35,464.65	4,985.32	45,828.20	10,363.55	0.00
	N ₂ O	0.41	0.36	0.05	0.47	0.11	0.00
	CH ₄	2.06	1.80	0.25	2.33	0.53	0.00
	PM	2.01	4.32	0.00	8.66	4.35	0.00
	PM ₁₀	8.02	7.22	0.80	8.76	1.54	0.00
744	PM _{2.5}	8.02	7.36	0.66	8.76	1.40	0.00
	SO ₂	8.77	8.04	0.72	9.57	1.53	0.00
	NO _x	45.55	39.50	6.05	49.71	10.20	0.00
	VOC	5.81	5.33	0.48	6.34	1.01	0.00
	CO	88.66	81.32	7.34	96.84	15.52	0.00
	Lead	5.28E-04	4.82E-04	4.59E-05	5.76E-04	9.45E-05	0.00
	Fluorides	0.00	0.00	0.00	0.00	0.00	0.00
	H ₂ SO ₄	0.00	0.00	0.00	0.00	0.00	0.00
	H ₂ S	0.10	0.09	3.83E-03	0.11	0.01	0.00
	TRS	0.10	0.09	3.21E-03	0.11	0.01	0.00
	CO ₂	148,126.65	143,860.54	4,266.12	166,202.49	22,341.96	0.00
	N ₂ O	1.51	1.46	0.04	1.69	0.23	0.00
	CH ₄	7.53	7.31	0.22	8.45	1.14	0.00
	PM	2.00	4.68	0.00	9.23	4.55	0.00
	PM ₁₀	8.01	7.59	0.43	9.23	1.64	0.00
	PM _{2.5}	8.01	7.60	0.41	9.23	1.63	0.00
	SO ₂	8.75	8.30	0.45	10.08	1.78	0.00
745	NO _x	50.11	44.94	5.16	56.20	11.25	0.00
	VOC	5.80	5.50	0.30	6.68	1.18	0.00
	CO	88.55	83.63	4.93	102.01	18.38	0.00
	Lead	5.27E-04	4.91E-04	3.59E-05	6.07E-04	1.16E-04	0.00
	Fluorides	0.00	0.00	0.00	0.00	0.00	0.00
	H ₂ SO ₄	0.00	0.00	0.00	0.00	0.00	0.00
	H ₂ S	0.10	0.09	3.40E-03	0.10	9.51E-03	0.00
	TRS	0.10	0.09	1.93E-03	0.10	8.04E-03	0.00
	CO ₂	148,126.65	145,398.35	2,728.31	157,482.30	12,083.95	0.00
	N ₂ O	1.51	1.48	0.03	1.60	0.12	0.00
	CH ₄	7.53	7.39	0.14	8.01	0.61	0.00
	PM	0.72	0.53	0.20	0.89	0.36	0.00
	PM ₁₀	5.69	1.69	4.01	5.62	3.93	0.07
	PM _{2.5}	5.07	0.55	4.52	5.29	4.74	0.00
	SO ₂	1.04	1.66	0.00	2.03	0.37	0.00
	NO _x	4.41	4.16	0.24	4.94	0.77	0.00
	VOC	0.31	0.04	0.27	0.35	0.32	0.00
34	CO	1.34	1.17	0.17	1.41	0.25	0.00
	Lead	4.80E-04	4.51E-04	2.91E-05	5.60E-04	1.09E-04	0.00
	Fluorides	0.00	0.00	0.00	0.00	0.00	0.00
	H ₂ SO ₄	0.00	0.00	0.00	0.00	0.00	0.00
	H ₂ S	0.09	0.06	0.03	0.09	0.03	1.70E-03
	TRS	0.09	0.06	0.03	0.09	0.03	1.70E-03
	CO ₂	115,228.12	72,880.82	42,347.30	109,168.22	36,287.41	6,059.89
	N ₂ O	2.11	0.14	1.98	0.21	0.07	1.91
	CH ₄	2.21	1.37	0.83	2.06	0.68	0.15

Montrose Energy, LLC - Trainor, PA Refinery
Table C-33
Project Emission Increases Summary

[illegible]

Table C-33
Montrose Energy, LLC - Trainor, PA Refinery
Project Emission Increases Summary

Source		Pollutant		Projected Actual Emissions (PAE)	Baseline Actual Emissions (BAE)	Emission Increases (PAE - BAE)	Emissions Which Could Have Been Accommodated (CHA)	Excludable Emissions (CHA - BAE)	Total Project Emissions (PAE - Excludable - BAE)
140	Tank 155	PM	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM ₁₀	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM _{2.5}	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		CO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		VOC	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		NO _x	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		SO ₂	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM ₁₀	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM _{2.5}	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		CO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		VOC	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		NO _x	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		SO ₂	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM ₁₀	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM _{2.5}	0.00	0.00	0.00	0.00	0.00	0.00	0.00
138	Tank 151	PM	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM ₁₀	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM _{2.5}	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		CO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		VOC	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		NO _x	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		SO ₂	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM ₁₀	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM _{2.5}	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		CO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		VOC	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		NO _x	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		SO ₂	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM ₁₀	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM _{2.5}	0.00	0.00	0.00	0.00	0.00	0.00	0.00
137	Tank 152	PM	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM ₁₀	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM _{2.5}	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		CO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		VOC	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		NO _x	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		SO ₂	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM ₁₀	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM _{2.5}	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		CO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		VOC	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		NO _x	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		SO ₂	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM ₁₀	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM _{2.5}	0.00	0.00	0.00	0.00	0.00	0.00	0.00
127	Tank 96	PM	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM ₁₀	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM _{2.5}	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		CO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		VOC	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		NO _x	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		SO ₂	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM ₁₀	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM _{2.5}	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		CO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		VOC	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		NO _x	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		SO ₂	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM ₁₀	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM _{2.5}	0.00	0.00	0.00	0.00	0.00	0.00	0.00
126	Tank 95	PM	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM ₁₀	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM _{2.5}	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		CO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		VOC	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		NO _x	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		SO ₂	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM ₁₀	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM _{2.5}	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		CO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		VOC	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		NO _x	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		SO ₂	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM ₁₀	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		PM _{2.5}	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table C-33
Monroe Energy, LLC - Trainer, PA Refinery
Project Emission Increases Summary

Source	Pollutant	ton/yr				
		Projected Actual Emissions (PAE)	Baseline Actual Emissions (BAE)	Emission Increases (PAE - BAE)	Emissions Which Accommodated (CHA)	Excludable Emissions (CHA - BAE)
142	PM ₁₀	-	-	-	-	-
	PM _{2.5}	-	-	-	-	-
	SO ₂	-	-	-	-	-
	NO _x	-	-	-	-	-
	VOC	0.21	0.15	0.06	0.24	0.09
	CO	-	-	-	-	-
	Lead	-	-	-	-	-
	Fluorides	-	-	-	-	-
	H ₂ SO ₄	-	-	-	-	-
	H ₂ S	-	-	-	-	-
	TRF	-	-	-	-	-
	CO ₂	-	-	-	-	-
	N ₂ O	-	-	-	-	-
	CH ₄	-	-	-	-	-
	PM	-	-	-	-	-
	PM ₁₀	-	-	-	-	-
	PM _{2.5}	-	-	-	-	-
	SO ₂	-	-	-	-	-
	NO _x	-	-	-	-	-
143	PM ₁₀	-	-	-	-	-
	PM _{2.5}	-	-	-	-	-
	SO ₂	-	-	-	-	-
	NO _x	-	-	-	-	-
	VOC	3.97	4.08	0.00	4.06	-2.35E-02
	CO	-	-	-	-	-
	Lead	-	-	-	-	-
	Fluorides	-	-	-	-	-
	H ₂ SO ₄	-	-	-	-	-
	H ₂ S	-	-	-	-	-
	TRF	-	-	-	-	-
	CO ₂	-	-	-	-	-
	N ₂ O	-	-	-	-	-
	CH ₄	-	-	-	-	-
	PM	-	-	-	-	-
	PM ₁₀	-	-	-	-	-
	PM _{2.5}	-	-	-	-	-
	SO ₂	-	-	-	-	-
	NO _x	-	-	-	-	-
	VOC	-	-	-	-	-
144	PM ₁₀	-	-	-	-	-
	PM _{2.5}	-	-	-	-	-
	SO ₂	-	-	-	-	-
	NO _x	-	-	-	-	-
	VOC	6.04	2.68	3.36	6.21	3.55
	CO	-	-	-	-	-
	Lead	-	-	-	-	-
	Fluorides	-	-	-	-	-
	H ₂ SO ₄	-	-	-	-	-
	H ₂ S	-	-	-	-	-
	TRF	-	-	-	-	-
	CO ₂	-	-	-	-	-
	N ₂ O	-	-	-	-	-
	CH ₄	-	-	-	-	-
	PM	-	-	-	-	-
	PM ₁₀	-	-	-	-	-
	PM _{2.5}	-	-	-	-	-
	SO ₂	-	-	-	-	-
	NO _x	-	-	-	-	-
	VOC	-	-	-	-	-
145	PM ₁₀	-	-	-	-	-
	PM _{2.5}	-	-	-	-	-
	SO ₂	-	-	-	-	-
	NO _x	-	-	-	-	-
	VOC	0.22	4.69	0.00	0.26	-4.43E+00
	CO	-	-	-	-	-
	Lead	-	-	-	-	-
	Fluorides	-	-	-	-	-
	H ₂ SO ₄	-	-	-	-	-
	H ₂ S	-	-	-	-	-
	TRF	-	-	-	-	-
	CO ₂	-	-	-	-	-
	N ₂ O	-	-	-	-	-
	CH ₄	-	-	-	-	-
	PM	-	-	-	-	-
	PM ₁₀	-	-	-	-	-
	PM _{2.5}	-	-	-	-	-
	SO ₂	-	-	-	-	-
	NO _x	-	-	-	-	-
	VOC	-	-	-	-	-
	CO	-	-	-	-	-

Table C-33
Monroe Energy, LLC - Trainer, PA Refinery
Project Emission Increases Summary

Source	Pollutant	t/yr					
		Projected Actual Emissions (PAE)	Baseline Actual Emissions (BAE)	Emission Increases (PAE - BAE)	Emissions Which Could Have Been Accommodated (CHA)	Excludable Emissions (CHA - BAE)	Total Project Emissions (PAE - Excludable - BAE)
145	PM	-	-	-	-	-	-
	PM ₁₀	-	-	-	-	-	-
	SO ₂	-	-	-	-	-	-
	NO _x	-	-	-	-	-	-
	VOC	3.25	0.61	2.61	6.36	3.71	0.00
	CO	-	-	-	-	-	-
	Lead	-	-	-	-	-	-
	Fluorides	-	-	-	-	-	-
	H ₂ SO ₄	-	-	-	-	-	-
	H ₂ S	-	-	-	-	-	-
	TRIS	-	-	-	-	-	-
	CO ₂	-	-	-	-	-	-
	N ₂ O	-	-	-	-	-	-
	CH ₄	-	-	-	-	-	-
	PM	-	-	-	-	-	-
	PM ₁₀	-	-	-	-	-	-
	SO ₂	-	-	-	-	-	-
	NO _x	-	-	-	-	-	-
	VOC	4.25	1.82	2.43	4.41	2.38	0.00
	CO	-	-	-	-	-	-
146	Lead	-	-	-	-	-	-
	Fluorides	-	-	-	-	-	-
	H ₂ SO ₄	-	-	-	-	-	-
	H ₂ S	-	-	-	-	-	-
	TRIS	-	-	-	-	-	-
	CO ₂	-	-	-	-	-	-
	N ₂ O	-	-	-	-	-	-
	CH ₄	-	-	-	-	-	-
	PM	-	-	-	-	-	-
	PM ₁₀	-	-	-	-	-	-
	SO ₂	-	-	-	-	-	-
	NO _x	-	-	-	-	-	-
	VOC	4.25	1.82	2.43	4.41	2.38	0.00
	CO	-	-	-	-	-	-
	Lead	-	-	-	-	-	-
	Fluorides	-	-	-	-	-	-
	H ₂ SO ₄	-	-	-	-	-	-
	H ₂ S	-	-	-	-	-	-
	TRIS	-	-	-	-	-	-
	CO ₂	-	-	-	-	-	-
147	CH ₄	-	-	-	-	-	-
	PM	-	-	-	-	-	-
	PM ₁₀	-	-	-	-	-	-
	SO ₂	-	-	-	-	-	-
	NO _x	-	-	-	-	-	-
	VOC	3.79	1.88	1.91	7.79	5.91	0.00
	CO	-	-	-	-	-	-
	Lead	-	-	-	-	-	-
	Fluorides	-	-	-	-	-	-
	H ₂ SO ₄	-	-	-	-	-	-
	H ₂ S	-	-	-	-	-	-
	TRIS	-	-	-	-	-	-
	CO ₂	-	-	-	-	-	-
	N ₂ O	-	-	-	-	-	-
	CH ₄	-	-	-	-	-	-
	PM	-	-	-	-	-	-
	PM ₁₀	-	-	-	-	-	-
	SO ₂	-	-	-	-	-	-
	NO _x	-	-	-	-	-	-
	VOC	8.26	2.23	6.03	20.33	18.10	0.00
	CO	-	-	-	-	-	-
148	Lead	-	-	-	-	-	-
	Fluorides	-	-	-	-	-	-
	H ₂ SO ₄	-	-	-	-	-	-
	H ₂ S	-	-	-	-	-	-
	TRIS	-	-	-	-	-	-
	CO ₂	-	-	-	-	-	-
	N ₂ O	-	-	-	-	-	-
	CH ₄	-	-	-	-	-	-
	PM	-	-	-	-	-	-
	PM ₁₀	-	-	-	-	-	-
	SO ₂	-	-	-	-	-	-
	NO _x	-	-	-	-	-	-
	VOC	8.26	2.23	6.03	20.33	18.10	0.00
	CO	-	-	-	-	-	-
	Lead	-	-	-	-	-	-
	Fluorides	-	-	-	-	-	-
	H ₂ SO ₄	-	-	-	-	-	-
	H ₂ S	-	-	-	-	-	-
	TRIS	-	-	-	-	-	-
	CO ₂	-	-	-	-	-	-
149	CH ₄	-	-	-	-	-	-
	PM	-	-	-	-	-	-
	PM ₁₀	-	-	-	-	-	-
	SO ₂	-	-	-	-	-	-
	NO _x	-	-	-	-	-	-
	VOC	3.55	2.89	0.66	4.06	1.17	0.00
	CO	-	-	-	-	-	-
	Lead	-	-	-	-	-	-
	Fluorides	-	-	-	-	-	-
	H ₂ SO ₄	-	-	-	-	-	-
	H ₂ S	-	-	-	-	-	-
	TRIS	-	-	-	-	-	-
	CO ₂	-	-	-	-	-	-
	N ₂ O	-	-	-	-	-	-
	CH ₄	-	-	-	-	-	-
	PM	-	-	-	-	-	-
	PM ₁₀	-	-	-	-	-	-
	SO ₂	-	-	-	-	-	-
	NO _x	-	-	-	-	-	-
	VOC	3.55	2.89	0.66	4.06	1.17	0.00
	CO	-	-	-	-	-	-

Table C-33
 Monroe Energy, LLC - Trainer, PA Refinery
 Project Emission Increases Summary

Source	Pollutant	tons/yr				
		Projected Actual Emissions (PAE)	Baseline Actual Emissions (BAE)	Emission Increases (PAE - BAE)	Emissions Which Accommodated (CHA)	Excludable Emissions (CHA - BAE)
150	PM ₁₀	-	-	-	-	-
	PM _{2.5}	-	-	-	-	-
	SO ₂	-	-	-	-	-
	NO _x	-	-	-	-	-
	VOC	2.89	1.69	1.20	3.42	1.73
	CO	-	-	-	-	-
	Lead	-	-	-	-	-
	Fluorides	-	-	-	-	-
	H ₂ SO ₄	-	-	-	-	-
	H ₂ S	-	-	-	-	-
	TRs	-	-	-	-	-
	CO ₂	-	-	-	-	-
	N ₂ O	-	-	-	-	-
	CH ₄	-	-	-	-	-
	PM	-	-	-	-	-
152	PM ₁₀	-	-	-	-	-
	PM _{2.5}	-	-	-	-	-
	SO ₂	-	-	-	-	-
	NO _x	-	-	-	-	-
	VOC	6.13	4.21	1.92	6.24	2.03
	CO	-	-	-	-	-
	Lead	-	-	-	-	-
	Fluorides	-	-	-	-	-
	H ₂ SO ₄	-	-	-	-	-
	H ₂ S	-	-	-	-	-
	TRs	-	-	-	-	-
	CO ₂	-	-	-	-	-
	N ₂ O	-	-	-	-	-
	CH ₄	-	-	-	-	-
	PM	-	-	-	-	-
154	PM ₁₀	-	-	-	-	-
	PM _{2.5}	-	-	-	-	-
	SO ₂	-	-	-	-	-
	NO _x	-	-	-	-	-
	VOC	12.01	3.99	8.02	13.79	9.80
	CO	-	-	-	-	-
	Lead	-	-	-	-	-
	Fluorides	-	-	-	-	-
	H ₂ SO ₄	-	-	-	-	-
	H ₂ S	-	-	-	-	-
	TRs	-	-	-	-	-
	CO ₂	-	-	-	-	-
	N ₂ O	-	-	-	-	-
	CH ₄	-	-	-	-	-
	PM	-	-	-	-	-
156	PM ₁₀	-	-	-	-	-
	PM _{2.5}	-	-	-	-	-
	SO ₂	-	-	-	-	-
	NO _x	-	-	-	-	-
	VOC	7.43	6.36	1.06	7.94	1.58
	CO	-	-	-	-	-
	Lead	-	-	-	-	-
	Fluorides	-	-	-	-	-
	H ₂ SO ₄	-	-	-	-	-
	H ₂ S	-	-	-	-	-
	TRs	-	-	-	-	-
	CO ₂	-	-	-	-	-
	N ₂ O	-	-	-	-	-
	CH ₄	-	-	-	-	-
	PM	-	-	-	-	-
157	PM ₁₀	-	-	-	-	-
	PM _{2.5}	-	-	-	-	-
	SO ₂	-	-	-	-	-
	NO _x	-	-	-	-	-
	VOC	3.23	3.53	0.00	5.85	2.32
	CO	-	-	-	-	-
	Lead	-	-	-	-	-
	Fluorides	-	-	-	-	-
	H ₂ SO ₄	-	-	-	-	-
	H ₂ S	-	-	-	-	-
	TRs	-	-	-	-	-
	CO ₂	-	-	-	-	-
	N ₂ O	-	-	-	-	-
	CH ₄	-	-	-	-	-
	PM	-	-	-	-	-

REVISED JANUARY 13, 2016

Table C-33
Monroe Energy, LLC - Trainer, PA Refinery
Project Emission Increases Summary

Source	Pollutant	Projected Actual Emissions (PAE)	Baseline Actual Emissions (BAE)	Emission Increases (PAE - BAE)	Emissions Which Could Have Been Accommodated (CHA)	Excludable Emissions (CHA - BAE)	Total Project Emission Increases (PAE - Excludable - BAE)
160	PA	-	-	-	-	-	-
	PM ₁₀	-	-	-	-	-	-
	PM _{2.5}	-	-	-	-	-	-
	SO ₂	-	-	-	-	-	-
	NO _x	-	-	-	-	-	-
	VOC	8.75	2.24	6.51	22.24	20.00	0.00
	CO	-	-	-	-	-	-
	Lead	-	-	-	-	-	-
	Fluorides	-	-	-	-	-	-
	H ₂ SO ₄	-	-	-	-	-	-
	H ₂ S	-	-	-	-	-	-
	TRS	-	-	-	-	-	-
	CO ₂	-	-	-	-	-	-
	N ₂ O	-	-	-	-	-	-
	CH ₄	-	-	-	-	-	-
	PM	-	-	-	-	-	-
	PM ₁₀	-	-	-	-	-	-
	PM _{2.5}	-	-	-	-	-	-
	SO ₂	-	-	-	-	-	-
161	NO _x	-	-	-	-	-	-
	VOC	20.53	4.38	16.15	39.43	35.05	0.00
	CO	-	-	-	-	-	-
	Lead	-	-	-	-	-	-
	Fluorides	-	-	-	-	-	-
	H ₂ SO ₄	-	-	-	-	-	-
	ILS	-	-	-	-	-	-
	TRS	-	-	-	-	-	-
	CO ₂	-	-	-	-	-	-
	N ₂ O	-	-	-	-	-	-
	CH ₄	-	-	-	-	-	-
	PM	-	-	-	-	-	-
	PM ₁₀	-	-	-	-	-	-
	PM _{2.5}	-	-	-	-	-	-
	SO ₂	-	-	-	-	-	-
	NO _x	-	-	-	-	-	-
	VOC	11.26	8.82	2.44	11.81	2.99	0.00
	CO	-	-	-	-	-	-
	Lead	-	-	-	-	-	-
	Fluorides	-	-	-	-	-	-
163	H ₂ SO ₄	-	-	-	-	-	-
	ILS	-	-	-	-	-	-
	TRS	-	-	-	-	-	-
	CO ₂	-	-	-	-	-	-
	N ₂ O	-	-	-	-	-	-
	CH ₄	-	-	-	-	-	-
	PM	-	-	-	-	-	-
	PM ₁₀	-	-	-	-	-	-
	PM _{2.5}	-	-	-	-	-	-
	SO ₂	-	-	-	-	-	-
	NO _x	-	-	-	-	-	-
	VOC	11.26	8.82	2.44	11.81	2.99	0.00
	CO	-	-	-	-	-	-
	Lead	-	-	-	-	-	-
	Fluorides	-	-	-	-	-	-
	H ₂ SO ₄	-	-	-	-	-	-
	ILS	-	-	-	-	-	-
	TRS	-	-	-	-	-	-
	CO ₂	-	-	-	-	-	-
	N ₂ O	-	-	-	-	-	-
164	CH ₄	-	-	-	-	-	-
	PM	-	-	-	-	-	-
	PM ₁₀	-	-	-	-	-	-
	PM _{2.5}	-	-	-	-	-	-
	SO ₂	-	-	-	-	-	-
	NO _x	-	-	-	-	-	-
	VOC	5.47	5.54	0.00	6.60	1.05	0.00
	CO	-	-	-	-	-	-
	Lead	-	-	-	-	-	-
	Fluorides	-	-	-	-	-	-
	H ₂ SO ₄	-	-	-	-	-	-
	ILS	-	-	-	-	-	-
	TRS	-	-	-	-	-	-
	CO ₂	-	-	-	-	-	-
	N ₂ O	-	-	-	-	-	-
	CH ₄	-	-	-	-	-	-
	PM	-	-	-	-	-	-
	PM ₁₀	-	-	-	-	-	-
	PM _{2.5}	-	-	-	-	-	-
	SO ₂	-	-	-	-	-	-
	NO _x	-	-	-	-	-	-

Table C-34
Monroe Energy, LLC - Trainer, PA Refinery
PSD Applicability Assessment Summary

Emission Unit	Project Related Emissions Increase (t/yr)										
	PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	VOC	CO	Lead	H ₂ S	THS	CO ₂ e (MMBtu)
101 FCC Unit	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	154,979.46
733 FCCU Feed Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
735 Kerosene/HDTU Feed Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
736 Diesel HTU Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
737 DO/VO Hydrocracker Feed Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
738 Naphtalene HDS Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.75E-06	0.00	0.00	0.00
739 Fluidized Bed Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
740 Isocater 1st Stage Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
741 Isocater 2nd Stage Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
742 VCD 541 VAC Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.41	2.46E-06	1.37E-03	8.04E-04	1,316.35
743 VCD 542 VAC Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
744 VCD 543 VAC Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
745 ACTD 544 Crude Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
34 ACTD 544 Crude Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35 Boiler 9	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
102 Boiler 10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
103 SRU	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
104 Main Flare	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24,261.81
105 Tank 91	-	-	-	-	-	-	-	-	-	-	104.87
106 Tank 94	-	-	-	-	-	-	-	-	-	-	-
107 Tank 95	-	-	-	-	-	-	-	-	-	-	-
108 Tank 96	-	-	-	-	-	-	-	-	-	-	-
109 Tank 132	-	-	-	-	-	-	-	-	-	-	-
110 Tank 133	-	-	-	-	-	-	-	-	-	-	-
111 Tank 134	-	-	-	-	-	-	-	-	-	-	-
112 Tank 135	-	-	-	-	-	-	-	-	-	-	-
113 Tank 137	-	-	-	-	-	-	-	-	-	-	-
114 Tank 139 (Source ID 139)	-	-	-	-	-	-	-	-	-	-	-
115 Tank 143	-	-	-	-	-	-	-	-	-	-	-
116 Tank 144	-	-	-	-	-	-	-	-	-	-	-
117 Tank 145	-	-	-	-	-	-	-	-	-	-	-
118 Tank 162	-	-	-	-	-	-	-	-	-	-	-
119 Tank 163	-	-	-	-	-	-	-	-	-	-	-
120 Tank 164	-	-	-	-	-	-	-	-	-	-	-
121 Tank 165	-	-	-	-	-	-	-	-	-	-	-
122 Tank 166	-	-	-	-	-	-	-	-	-	-	-
123 Tank 168	-	-	-	-	-	-	-	-	-	-	-
124 Tank 169	-	-	-	-	-	-	-	-	-	-	-
125 Tank 170	-	-	-	-	-	-	-	-	-	-	-
126 Tank 171	-	-	-	-	-	-	-	-	-	-	-
127 Tank 172	-	-	-	-	-	-	-	-	-	-	-
128 Tank 173	-	-	-	-	-	-	-	-	-	-	-
129 Tank 174	-	-	-	-	-	-	-	-	-	-	-
130 Tank 175	-	-	-	-	-	-	-	-	-	-	-
131 Tank 176	-	-	-	-	-	-	-	-	-	-	-
132 Tank 177	-	-	-	-	-	-	-	-	-	-	-
133 Tank 178	-	-	-	-	-	-	-	-	-	-	-
134 Tank 181	-	-	-	-	-	-	-	-	-	-	-
135 Tank 182	-	-	-	-	-	-	-	-	-	-	-
136 Tank 183	-	-	-	-	-	-	-	-	-	-	-
137 Tank 184	-	-	-	-	-	-	-	-	-	-	-
138 Tank 185	-	-	-	-	-	-	-	-	-	-	-
139 Tank 186	-	-	-	-	-	-	-	-	-	-	-
140 New Feed Heater	3.15	3.15	3.15	4.42	22.64	3.15	17.08	2.66E-04	-	-	\$1,955.43
141 New Cooling Tower	0.16	0.16	0.16	-	-	-	-	-	-	-	-
142 Additional Refinery Emissions	-	-	-	-	-	-	-	-	-	-	-
143 Total Project Emissions Increase	3.31	4.31	3.40	17.79	21.28	14.37	18.12	2.77E-04	4.06E-03	4.21E-03	316,667.25
144 PSD Significance Threshold	25	15	10	40	40	40	100	8.6	10	10	75,000
145 PSD Significance?	No	No	No	No	No	No	No	No	No	No	No

$$CO_2e = \sum_{i=1}^n GHG_i \times GWP_i$$

where GHG_i = annual mass emissions of greenhouse gas i (short tons/yr)
GWP_i = global warming potential of greenhouse gas i from the table below

Greenhouse Gas	GWP (100 year)
CO ₂	1
CH ₄	25
N ₂ O	298
CF ₄	23,500
Perfluorocarbons	10,000

As of June 23, 2014, emissions by the U.S. Supreme Court, at 1301 Pennsylvania Avenue, N.E., and at 1301 Pennsylvania Avenue, N.E., are not included in the PSD emissions inventory.

Table C-35
Monroe Energy, LLC - Trainer, PA Refinery
NNSR Applicability Assessment Summary

Emission Unit		Project Related Emissions Increase (tpy)				
		PM _{2.5} NNSR			Ozone NNSR	
		PM _{2.5}	SO ₂	NO _x	NO _x	VOC
101	FCC Unit	0.00	0.00	0.00	0.00	0.00
733	FCCU Feed Heater	0.00	0.00	0.00	0.00	0.00
735	Kerosene/HCN HTU Feed Heater	0.00	0.00	0.00	0.00	0.00
736	Diesel HTU Heater	0.00	0.00	0.00	0.00	0.00
741	D2/VGO Hydrotreater Feed Heater	0.00	0.00	0.00	0.00	0.00
737	Naphtha HDS Heater	0.06	0.06	0.00	0.00	0.04
738	Platformer Feed Heater	0.00	0.00	0.00	0.00	0.00
739	Isocracker 1st Stage Heater	0.00	0.00	0.00	0.00	0.00
740	Isocracker Splitter Reboiler	0.00	0.00	0.00	0.00	0.00
742	VCD 541 VAC Heater	0.04	0.04	1.23	1.23	0.03
743	VCD 542 VAC Heater	0.00	0.00	0.00	0.00	0.00
746	VCD 544 VAC Heater	0.00	0.00	0.00	0.00	0.00
744	ACD 543 Crude Heater	0.00	0.00	0.00	0.00	0.00
745	ACD 544 Crude Heater	0.00	0.00	0.00	0.00	0.00
34	Boiler 9	0.00	0.00	0.00	0.00	0.00
35	Boiler 10	0.00	0.91	0.00	0.00	0.00
102	SRU	0.00	12.36	0.00	0.00	0.00
103	Main Flare	0.00	0.00	0.00	0.00	0.00
165	Tank 93	-	-	-	-	0.00
166	Tank 94	-	-	-	-	0.00
126	Tank 95	-	-	-	-	0.00
127	Tank 96	-	-	-	-	0.00
137	Tank 152	-	-	-	-	0.00
138	Tank 153	-	-	-	-	0.00
140	Tank 155	-	-	-	-	0.00
142	Tank 157	-	-	-	-	0.00
300	Tank 158 (Source ID 193)	-	-	-	-	0.00
143	Tank 159	-	-	-	-	0.00
194	Tank 160	-	-	-	-	0.00
144	Tank 161	-	-	-	-	0.00
145	Tank 162	-	-	-	-	0.00
146	Tank 163	-	-	-	-	0.00
147	Tank 164	-	-	-	-	0.00
148	Tank 165	-	-	-	-	0.00
149	Tank 166	-	-	-	-	0.00
150	Tank 168	-	-	-	-	0.00
152	Tank 170	-	-	-	-	0.00
155	Tank 174	-	-	-	-	0.00
156	Tank 175	-	-	-	-	0.00
157	Tank 178	-	-	-	-	0.00
160	Tank 181	-	-	-	-	0.00
161	Tank 182	-	-	-	-	0.00
163	Tank 185	-	-	-	-	0.00
164	Tank 186	-	-	-	-	0.00
N/A	New Feed Heaters	3.15	4.42	22.04	22.04	3.15
N/A	New Cooling Tower	0.16	-	-	-	6.02
N/A	Additional Fugitive Emissions	-	-	-	-	5.13
Total Project Emissions Increases		3.40	17.79	23.28	23.28	14.37
NNSR Significance Threshold		10	40	40	25	25
NNSR Significant?		No	No	No	No	No

Table C-36
Monroe Energy, LLC - Trainer, PA Refinery
Contemporaneous Emission Increases/Decreases

Date ^(a)	Plan Approval/ RFD	Description	Note	Emission Increase/Decrease	
				NO _x	VOC
				(tpy)	
10/03/2006	23-0003I	Two New Boilers		23.70	2.60
05/04/2007	23-0003J	Clean Fuel Project	(b)	39.00	0.00
10/19/2007	23-0003K	Modification to PA 23-0003G		21.89	0.00
10/23/2008	23-0003M	Cooling Tower		0.00	0.74
12/08/2008	23-0003N	FCCU Feed Heater Modification		0.00	(1.10)
02/09/2009	23-0003O	ReVAP	(c)		
04/10/2009	23-0003P	2010 Turnaround		1.59	0.26
09/28/2009	23-0003Q	Boiler MACT Phase II Application		0.00	0.00
12/04/2009	RFD	Light Components Loading		0.07	0.14
12/23/2009	23-0003R	Aromatic Saturation Unit Project	(c)		
10/01/2010	23-0003S	Flare Gas Recovery Project		0.00	3.58
10/01/2010	23-0003T	Amended Alky ReVAP Project	(c)		
11/09/2011	23-0003U	Two New Boilers (Replace Boiler 8)(withdrawn)			
04/12/2012	23-0003V	Diesel Heater Project	(c)		
08/09/2012	RFD	Main Flare - Turnaround		0.00	0.09
01/10/2013	RFD #3418	Propane Loading into Trucks		0.00	0.00
04/04/2013	RFD #3561	Peabody Heater Modifications		0.00	0.00
04/23/2013	RFD #3596	Max Jet		0.00	0.21
05/17/2013	23-0003W	D2 Project	(d)	0.00	3.44
03/13/2014	23-0003X	400 kW Emergency Generator	(e)	1.19	0.01
10/14/2014	23-0003Y	Proposed Boiler 13 (Replace Boiler 8)		11.70	1.98
Total Contemporaneous Emission Increases with Proposed Boiler 13				117.14	0.00
Total Contemporaneous Emission Reduction Credits Required				(f)	152.28
Total Emission Reduction Credits Previously Provided with PA 23-0003X				(g)	(146.20)
Net Emission Reduction Credits Required/Provided with PA 23-0003Y				(h)	6.08
TBD	23-0003Z	Proposed Cooling Tower Project	(i)	1.44	67.38
TBD	TBD	Proposed Flare PAA		1.60	0.09
TBD	TBD	Proposed ULSG PAA		23.28	14.37
5-year Aggregation				26.32	14.45
10-year Aggregation				26.32	14.45
Significance Level				25	25
Total Emission Reduction Credits Required ^(j)				34	N/A

Notes:

^(a) Based on net emission increases occurring over a 10-year period.

^(b) This application modified an existing Plan Approval No. 23-0003E.

^(c) Application/Plan Approval was withdrawn.

^(d) Project triggered NNSR for VOC, 40 tons of VOC ERCs were purchased, cumulative contemporaneous emissions increase reset back to zero.

^(e) Project triggered NNSR for NO_x, 147.6 tons of NO_x ERCs were purchased, cumulative contemporaneous emissions increase reset back to zero with an additional 1.4 tons available for future use.

^(f) At an offset ratio of 1.3:1 per 25 Pa. Code § 127.210.

^(g) Application/Plan Approval 23-0003U was withdrawn and desired back-up capacity now being replaced with proposed Boiler 13. Aggregate NO_x ERCs required is reduced accordingly for those already provided under PA 23-0003X, per conversations with Virendra Trivedi (PADEP) on July 10, 2014.

^(h) Project triggered NNSR for NO_x, 6.08 tons of NO_x ERCs were purchased, cumulative contemporaneous emission increase reset back to zero.

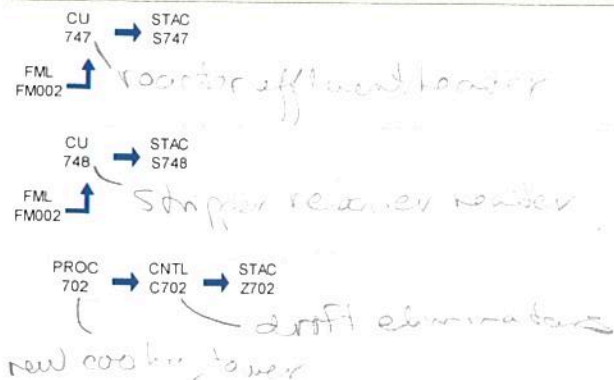
⁽ⁱ⁾ Project triggered NNSR for VOC, 69.39 tons of VOC ERCs were purchased, cumulative contemporaneous emission increase reset back to zero.

Are the references to the permit relevant to this?
Are not really relevant to this?

SECTION A. Plan Approval Inventory List

Source ID	Source Name	Capacity/Throughput	Fuel/Material
747	REACTOR EFFLUENT HEATER H-124-01 (H01)	99,600 MMBTU/HR	
		84,263,000 CF/HR	Refinery Gas
748	STRIPPER REBOILER HEATER H-124-02 (H02)	44,200 MMBTU/HR	
		37,394,000 CF/HR	Refinery Gas
101	FCC UNIT		
102	CLAUS SULFUR RECOV. PLT.		
103	MAIN FLARE		
114	RACT FUGITIVE EQUIPMENT		
119	PLATFORMER REGENERATOR		
133	BENZENE WASTE OPERATIONS		
215	NSPS NEW FUGITIVE EQUIPMENT		
702	ULSG COOLING TOWER	612,000,000 Gal/HR	COOLING WATER
737	NAPHTHAHDS HEATER	65,000 MMBTU/HR	
742	VCD 541 VAC HEATER	56,000 MMBTU/HR	
C702	COOLING TOWER DRIFT ELIMINATORS		
FM002	NORTH SIDE FUEL GAS SYSTEM (RFG)		
S747	REACTOR EFFLUENT HEATER H-124-01 (H01) STACK		
S748	STRIPPER REBOILER HEATER H-124-02 (H02) STACK		
Z702	COOLING TOWER FUGITIVES		

PERMIT MAPS



Add unit 114 React fug. eqpt

where are the ULSG units?

SECTION B. General Plan Approval Requirements

#001 [25 Pa. Code § 121.1]

Definitions

Words and terms that are not otherwise defined in this plan approval shall have the meanings set forth in Section 3 of the Air Pollution Control Act (35 P.S. § 4003) and 25 Pa. Code § 121.1.

#002 [25 Pa. Code § 127.12b (a) (b)]

Future Adoption of Requirements

The issuance of this plan approval does not prevent the future adoption by the Department of any rules, regulations or standards, or the issuance of orders necessary to comply with the requirements of the Federal Clean Air Act or the Pennsylvania Air Pollution Control Act, or to achieve or maintain ambient air quality standards. The issuance of this plan approval shall not be construed to limit the Department's enforcement authority.

#003 [25 Pa. Code § 127.12b]

Plan Approval Temporary Operation

This plan approval authorizes temporary operation of the source(s) covered by this plan approval provided the following conditions are met:

(a) When construction, installation, modification, or reactivation is being conducted, the permittee shall provide written notice to the Department of the completion of the activity approved by this plan approval and the permittee's intent to commence operation at least five (5) working days prior to the completion of said activity. The notice shall state when the activity will be completed and when the permittee expects to commence operation. When the activity involves multiple sources on different time schedules, notice is required for the commencement of operation of each source.

(b) Pursuant to 25 Pa. Code § 127.12b (d), temporary operation of the source(s) is authorized to facilitate the shutdown of sources and air cleaning devices, to permit operations pending the issuance of a permit under 25 Pa. Code Chapter 127, Subchapter F (relating to operating permits) or Subchapter G (relating to Title V operating permits) or to permit the evaluation of the air contaminant aspects of the source.

(c) This plan approval authorizes a temporary operation period not to exceed 180 days from the date of commencement of operation, provided the Department receives notice from the permittee pursuant to paragraph (a), above.

(d) The permittee may request an extension of the 180-day shutdown period if further evaluation of the air contaminant aspects of the source(s) is necessary. The request for an extension shall be submitted, in writing, to the Department at least 15 days prior to the end of the initial 180-day shutdown period and shall provide a description of the compliance status of the source, a detailed schedule for establishing compliance, and the reasons compliance has not been established. This temporary operation period will be valid for a limited time and may be extended for additional limited periods, each not to exceed 180 days.

(e) The notice submitted by the permittee pursuant to subpart (a) above, prior to the expiration of the plan approval, shall modify the plan approval expiration date on Page 1 of this plan approval. The new plan approval expiration date shall be 180 days from the date of commencement of operation.

#004 [25 Pa. Code § 127.12(a) (10)]

Content of Applications

The permittee shall maintain and operate the sources and associated air cleaning devices in accordance with good engineering practice as described in the plan approval application submitted to the Department.

#005 [25 Pa. Code §§ 127.12(c) and (d) & 35 P.S. § 4013.2]

Public Records and Confidential Information

(a) The records, reports or information obtained by the Department or referred to at public hearings shall be available to the public, except as provided in paragraph (b) of this condition.

(b) Upon cause shown by the permittee that the records, reports or information, or a particular portion thereof, but not emission data, to which the Department has access under the act, if made public, would divulge production or sales figures or methods, processes or production unique to that person or would otherwise tend to affect adversely the



SECTION B. General Plan Approval Requirements

competitive position of that person by revealing trade secrets, including intellectual property rights, the Department will consider the record, report or information, or particular portion thereof confidential in the administration of the act. The Department will implement this section consistent with sections 112(d) and 114(c) of the Clean Air Act (42 U.S.C.A. § 7412(d) and 7414(c)). Nothing in this section prevents disclosure of the report, record or information to Federal, State or local representatives as necessary for purposes of administration of Federal, State or local air pollution control laws, or when relevant in a proceeding under the act.

#006 [25 Pa. Code § 127.12b]

Plan Approval terms and conditions.

[Additional authority for this condition is derived from 25 Pa. Code Section 127.13]

(a) This plan approval will be valid for a limited time, as specified by the expiration date contained on Page 1 of this plan approval. Except as provided in § 127.11a and 127.215 (relating to reactivation of sources; and reactivation), at the end of the time, if the construction, modification, reactivation or installation has not been completed, a new plan approval application or an extension of the previous approval will be required.

(b) If construction has commenced, but cannot be completed before the expiration of this plan approval, an extension of the plan approval must be obtained to continue construction. To allow adequate time for departmental action, a request for the extension shall be postmarked at least thirty (30) days prior to the expiration date. The request for an extension shall include the following:

- (i) A justification for the extension,
- (ii) A schedule for the completion of the construction

If construction has not commenced before the expiration of this plan approval, then a new plan approval application must be submitted and approval obtained before construction can commence.

(c) If the construction, modification or installation is not commenced within 18 months of the issuance of this plan approval or if there is more than an 18-month lapse in construction, modification or installation, a new plan approval application that meets the requirements of 25 Pa. Code Chapter 127, Subchapter B (related to plan approval requirements), Subchapter D (related to prevention of significant deterioration of air quality), and Subchapter E (related to new source review) shall be submitted. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified.

#007 [25 Pa. Code § 127.32]

Transfer of Plan Approvals

(a) This plan approval may not be transferred from one person to another except when a change of ownership is demonstrated to the satisfaction of the Department and the Department approves the transfer of the plan approval in writing.

(b) Section 127.12a (relating to compliance review) applies to a request for transfer of a plan approval. A compliance review form shall accompany the request.

(c) This plan approval is valid only for the specific source and the specific location of the source as described in the application.

#008 [25 Pa. Code § 127.12(4) & 35 P.S. § 4008 & § 114 of the CAA]

Inspection and Entry

(a) Pursuant to 35 P.S. § 4008, no person shall hinder, obstruct, prevent or interfere with the Department or its personnel in the performance of any duty authorized under the Air Pollution Control Act.

(b) The permittee shall also allow the Department to have access at reasonable times to said sources and associated air cleaning devices with such measuring and recording equipment, including equipment recording visual observations, as the Department deems necessary and proper for performing its duties and for the effective enforcement of the Air Pollution Control Act and regulations adopted under the act.



SECTION B. General Plan Approval Requirements

(c) Nothing in this plan approval condition shall limit the ability of the Environmental Protection Agency to inspect or enter the premises of the permittee in accordance with Section 114 or other applicable provisions of the Clean Air Act.

#009 [25 Pa. Code 127.13a]

Plan Approval Changes for Cause

This plan approval may be terminated, modified, suspended or revoked and reissued if one or more of the following applies:

(a) The permittee constructs or operates the source subject to the plan approval in violation of the act, the Clean Air Act, the regulations promulgated under the act or the Clean Air Act, a plan approval or permit in a manner that causes air pollution.

(b) The permittee fails to properly or adequately maintain or repair an air pollution control device or equipment attached to or otherwise made a part of the source.

(c) The permittee fails to submit a report required by this plan approval.

(d) The Environmental Protection Agency determines that this plan approval is not in compliance with the Clean Air Act or the regulations thereunder.

#010 [25 Pa. Code §§ 121.9 & 127.216]

Circumvention

(a) The permittee, or any other person, may not circumvent the new source review requirements of 25 Pa. Code Chapter 127, Subchapter E by causing or allowing a pattern of ownership or development, including the phasing, staging, delaying or engaging in incremental construction, over a geographic area of a facility which, except for the pattern of ownership or development, would otherwise require a permit or submission of a plan approval application.

(b) No person may permit the use of a device, stack height which exceeds good engineering practice stack height, dispersion technique or other technique which, without resulting in reduction of the total amount of air contaminants emitted, conceals or dilutes an emission of air contaminants which would otherwise be in violation of this plan approval, the Air Pollution Control Act or the regulations promulgated thereunder, except that with prior approval of the Department, the device or technique may be used for control of malodors.

#011 [25 Pa. Code § 127.12c]

Submissions

Reports, test data, monitoring data, notifications shall be submitted to the:

Regional Air Program Manager
PA Department of Environmental Protection
(At the address given on the plan approval transmittal letter or otherwise notified)

#012 [25 Pa. Code § 127.12(9) & 40 CFR Part 68]

Risk Management

(a) If required by Section 112(r) of the Clean Air Act, the permittee shall develop and implement an accidental release program consistent with requirements of the Clean Air Act, 40 CFR Part 68 (relating to chemical accident prevention provisions) and the Federal Chemical Safety Information, Site Security and Fuels Regulatory Relief Act (P.L. 106-40)

(b) The permittee shall prepare and implement a Risk Management Plan (RMP) which meets the requirements of Section 112(r) of the Clean Air Act, 40 CFR Part 68 and the Federal Chemical Safety Information, Site Security and Fuels Regulatory Relief Act when a regulated substance listed in 40 CFR § 68.130 is present in a process in more than the listed threshold quantity at the facility. The permittee shall submit the RMP to the Environmental Protection Agency according to the following schedule and requirements:

(1) The permittee shall submit the first RMP to a central point specified by the Environmental Protection Agency no later than the latest of the following:



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MONROE ENERGY LLC/TRAINER

**SECTION C. Site Level Plan Approval Requirements****I. RESTRICTIONS.**

No additional requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

II. TESTING REQUIREMENTS.

No additional testing requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

III. MONITORING REQUIREMENTS.

No additional monitoring requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

IV. RECORDKEEPING REQUIREMENTS.

No additional record keeping requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

V. REPORTING REQUIREMENTS.

No additional reporting requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

VI. WORK PRACTICE REQUIREMENTS.**# 001 [25 Pa. Code §129.55]****Petroleum refineries--specific sources**

All pumps and compressors handling VOCs with a vapor pressure of greater than 1.5 psi at actual conditions shall have mechanical seals. For the purpose of determining vapor pressure, a temperature no greater than 100°F shall be used.

VII. ADDITIONAL REQUIREMENTS.**# 002 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

The permittee shall comply with all existing requirements of its Operating Permit No. 23-00003, originally issued and subsequently amended, unless specifically revised in this Plan Approval. The provisions in this Plan Approval shall be construed to supersede any contrary provisions in any previous Plan Approval(s) and Operating Permit(s).

003 [25 Pa. Code §127.208]**ERC use and transfer requirements.**

The permittee shall use and transfer Emission Reduction Credits (ERCs) in accordance with 25 Pa. Code § 127.208.

004 [25 Pa. Code §127.210]**Offset ratios.**

(a) The 10-year aggregated NOx emission increase including this project is 26.32 tons.

(b) The permittee shall provide NOx ERCs at a 1.3:1 ratio to offset the net emission increase of 26.32 tons as per 25 Pa. Code §§ 127.210. The required NOx ERCs are 34.0 tons.

(c) Before commencing operation of the ULSG unit, the permittee shall provide 34.0 tons of NOx ERCs.

VIII. COMPLIANCE CERTIFICATION.

No additional compliance certifications exist except as provided in other sections of this plan approval including Section B (relating to Plan Approval General Requirements).

IX. COMPLIANCE SCHEDULE.

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MONROE ENERGY LLC/TRAINER

**SECTION C. Site Level Plan Approval Requirements**

No compliance milestones exist.



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MONROE ENERGY LLC/TRAINER



SECTION D. Source Level Plan Approval Requirements

Source ID: 747 Source Name: REACTOR EFFLUENT HEATER H-124-01 (H01)
 Source Capacity/Throughput: 99,600 MMBTU/HR
 84,263,000 CF/HR Refinery Gas



I. RESTRICTIONS.

Emission Restriction(s).

001 [25 Pa. Code §123.11]

Combustion units

Particulate matter emissions into the outdoor atmosphere from this combustion unit shall not exceed the rate determined by the following formula:

$$A = 3.6E^{(-0.56)}$$

where

A = Allowable emissions in pounds per million BTUs of heat input, and

E = Heat input to the combustion unit in millions of BTUs per hour.

when E is equal to or greater than 50 but less than 600

002 [25 Pa. Code §123.22]

Combustion units

No person may permit the emission into the outdoor atmosphere of sulfur oxides, expressed as SO₂, from any combustion unit in the Southeast Air Basin, in excess of 1.0 pounds per million Btu of heat input, pursuant to 25 Pa. Code §123.22(e)(1).

003 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

Combined emissions from Sources 747 and 748 shall not exceed the following

- (a) Nitrogen Oxides (NO_x) = 22.04 tons per year, calculated as a 12-month rolling sum.
- (b) Volatile Organic Compounds (VOC) = 3.15 tons per year, calculated as a 12-month rolling sum.
- (c) Carbon Monoxide (CO) = 17.08 tons per year, calculated as a 12-month rolling sum.
- (d) Sulfur Dioxide (SO₂) = 4.42 tons per year, calculated as a 12-month rolling sum.
- (e) Particulate Matter (PMPM-10/PM-2.5) = 3.15 tons per year, calculated as a 12-month rolling sum.

004 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

NO_x emissions from this source shall not exceed 0.035 lb/MMBtu.

005 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.102a]

SUBPART Ja - Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or



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MONROE ENERGY LLC/TRAINER



SECTION D. Source Level Plan Approval Requirements

Modification Commenced After May 14, 2007

Emissions limitations.

[Authority for this permit condition is derived from 40 C.F.R. § 60.102a(g).]

The owner or operator shall not burn in any fuel gas combustion device any fuel gas that contains H₂S in excess of 162 ppmv determined hourly on a 3-hour rolling average basis and H₂S in excess of 60 ppmv determined daily on a 365 successive calendar day rolling average basis.

[Compliance with this limit assures compliance with 25 Pa. Code §123.22(e)(1).]

006 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.102a]

SUBPART Ja - Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007

Emissions limitations.

[Authority for this permit condition is derived from 40 C.F.R. § 60.102a(g).]

For each natural draft process heater with a rated capacity of greater than 40 million British thermal units per hour (MMBtu/hr) on a higher heating value basis, the owner or operator shall not discharge to the atmosphere any emissions of NO_x in excess of 0.040 pounds per million British thermal units (lb/MMBtu) higher heating value basis determined daily on a 30-day rolling average basis.

Fuel Restriction(s).

007 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

This source shall only be fired by refinery fuel gas from the existing North Side Fuel Gas system

II. TESTING REQUIREMENTS.

008 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

[Additional authority for this permit condition is derived from 40 C.F.R. § 60.104a(a), (c), and (i).]

- (a) The permittee shall perform a stack test using Department-approved procedures, to show compliance with the NO_x emission limit set for the source. Source testing shall be performed within 180 days after initial startup of the source. Source testing shall be performed for the following pollutant: NO_x. This testing shall be conducted at a normal or average load.
- (b) At least sixty (60) days prior to the test, the permittee shall submit to the Department for approval the procedures for the test and a sketch with dimensions indicating the location of sampling ports and other data to ensure the collection of representative samples.
- (c) The stack test shall, at a minimum, test for the pollutant NO_x. Tests shall be conducted in accordance with the provisions of 40 C.F.R. § 60.104a(c) and (i) for NO_x and/or other Department approved methodology and 25 Pa. Code Chapter 139.
- (d) At least thirty (30) days prior to the test, the Regional Air Quality Manager, shall be informed of the date and time of the test.
- (e) Within sixty (60) days after the source test(s), two copies of the complete test report, including all operating conditions, shall be submitted to the Regional Air Quality Manager for approval.
- (f) In the event that any of the above deadlines cannot be met, the permittee may request an extension for the due date(s) in writing and include a justification for the extension. The Department may grant an extension for a reasonable cause.

**SECTION D. Source Level Plan Approval Requirements****III. MONITORING REQUIREMENTS.****# 009 [25 Pa. Code § 127.12b]****Plan approval terms and conditions.**

The permittee shall monitor the amount of fuel consumed by this source on a monthly and 12-month rolling basis.

010 [25 Pa. Code § 127.12b]**Plan approval terms and conditions.**

(a) The fuel gas supplied to this process heater shall be continuously monitored for H₂S concentration and averaged in accordance with 40 C.F.R. Part 60, Subpart Ja, and in accordance with the latest revision of the Department's Continuous Source Monitoring Manual.

(b) NO_x and O₂ concentrations from the exhaust stack of this process heater shall be continuously monitored and averaged in accordance with 40 C.F.R. Part 60, Subpart Ja, and in accordance with the latest revision of the Department's Continuous Source Monitoring Manual.

011 [40 CFR Part 60 Standards of Performance for New Stationary Sources § 40 CFR 60.107a]**SUBPART Ja - Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007****Monitoring of emissions and operations for fuel gas combustion devices and flares.**

The permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H₂S in the fuel gases before being burned in any fuel gas combustion device in accordance with the requirements specified in 40 C.F.R. § 60.107a(a)(2).

012 [40 CFR Part 60 Standards of Performance for New Stationary Sources § 40 CFR 60.107a]**SUBPART Ja - Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007****Monitoring of emissions and operations for fuel gas combustion devices and flares.**

The permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration (dry basis, 0-percent excess air) of NO_x emissions into the atmosphere in accordance with the requirements specified in 40 C.F.R. § 60.107a(d).

IV. RECORDKEEPING REQUIREMENTS.**# 013 [25 Pa. Code § 127.12b]****Plan approval terms and conditions.**

The permittee shall maintain records of the amount of fuel consumed by this source on a monthly and 12-month rolling basis.

014 [25 Pa. Code § 127.12b]**Plan approval terms and conditions.**

The permittee shall calculate and maintain records of NO_x, VOC, CO, SO₂, and PM₁₀/PM_{2.5} emissions for this source on a monthly and 12-month rolling sum basis.

015 [40 CFR Part 60 Standards of Performance for New Stationary Sources § 40 CFR 60.108a]**SUBPART Ja - Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007****Recordkeeping and reporting requirements.**

[Authority for this permit condition is derived from 40 CFR § 60.108a(c)(6).]

The owner or operator shall maintain the following records:

Handwritten note: need to comply with 40 CFR 60.107a

**SECTION D. Source Level Plan Approval Requirements**

- (4) A description of the action taken, if any.
- (5) The information described in 40 CFR § 60.108a(c)(6) for all discharges listed in paragraph (c)(6).
- (6) For any periods for which monitoring data are not available, any changes made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission limit. Operations of the control system and affected facility during periods of data unavailability are to be compared with operation of the control system and affected facility before and following the period of data unavailability.

(7) A written statement, signed by a responsible official, certifying the accuracy and completeness of the information contained in the report.

022 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4]

Subpart A - General Provisions

Address.

This source is subject to 40 CFR Part 60, Subpart Ja - Standards of Performance for New Stationary Sources, and shall comply with all applicable requirements of this Subpart.

Pursuant to 40 CFR Section 60.4, the permittee shall submit copies of all requests, reports, applications, submittals, and other communications to both EPA and the appropriate Regional Office of the Department. The EPA copies shall be forwarded to:

Air Enforcement Branch, Mail Code 3AP12
US EPA, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Any variations from the compliance monitoring, testing, and reporting methods specified in the New Source Performance Standards shall be approved in advance by the U.S. EPA.

023 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.13]

Subpart A - General Provisions

Addresses of State air pollution control agencies and EPA Regional Offices.

This source is subject to 40 CFR Part 63 Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants, and shall comply with all applicable requirements of this Subpart.

Pursuant to 40 CFR § 63.13, the permittee shall submit copies of all requests, reports, applications, submittals, and other communications to both EPA and the appropriate Regional Office of the Department. The EPA copies shall be forwarded to:

Air Enforcement Branch, Mail Code 3AP12
US EPA, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Any variations from the compliance monitoring, testing, and reporting methods specified in the National Emission Standards for Hazardous Air Pollutants shall be approved in advance by the U.S. EPA.

024 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.7545]

Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters.

What notifications must I submit and when?

[Authority for this permit condition is derived from 40 CFR § 63.7545(a).]

**SECTION D. Source Level Plan Approval Requirements**

The permittee shall submit to the Administrator all of the notifications in 40 CFR § 63.9(b) through (h), that are applicable by the dates specified.

025 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.7550]

Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters.

What reports must I submit and when?

(a) The permittee shall submit semi-annual compliance reports in accordance with 40 C.F.R. § 63.7550(b)(5), (c)(5), and (h)(3).

(b) The compliance report shall contain the following information:

- (i) Company and Facility name and address.
- (ii) Process unit information, emissions limitations, and operating parameter limitations.
- (iii) Date of report and beginning and ending dates of the reporting period.
- (iv) Include the date of the most recent tune-up.

(v) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

(vi) The total operating time during the reporting period.

(c) The permittee shall submit all reports required by Table 9 of 40 CFR Part 63, Subpart DDDDD electronically to the EPA via the CEDRI. (CEDRI can be accessed through the EPA's CDX.) The permittee shall use the appropriate electronic report in CEDRI for this subpart. Instead of using the electronic report in CEDRI for this subpart, you may submit an alternate electronic file consistent with the XML schema listed on the CEDRI Web site (<http://www.epa.gov/ttn/chie/cedri/index.html>), once the XML schema is available. If the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, you must submit the report to the Administrator at the appropriate address listed in 40 C.F.R. § 63.13. You must begin submitting reports via CEDRI no later than 90 days after the form becomes available in CEDRI.

VI. WORK PRACTICE REQUIREMENTS.

026 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

This source shall be operated and maintained in a manner consistent with good operating and maintenance practices, and in accordance with manufacturer's specifications.

027 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

Continuous Emission Monitoring Systems and components must be operated and maintained in accordance with the requirements established in 25 Pa. Code Chapter 139, Subchapter C (relating to requirements for source monitoring for stationary sources), and the "Quality Assurance" requirements in the Department's Continuous Source Monitoring Manual, Revision No. 8, 274-0300-001.

Compliance with any subsequently issued revision to the Continuous Monitoring Source Manual will constitute compliance with this permit condition.

028 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.103a]

SUBPART Ja - Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007



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SECTION D. Source Level Plan Approval Requirements

Work practice standards.

[Authority for this permit condition is derived from 40 CFR § 60.103a(c)(2), (d)(1) & (5), and (e)(1)-(3).]

(a) Each owner or operator that operates a fuel gas combustion device shall conduct a root cause analysis and a corrective action analysis for each exceedance of an applicable short-term emissions limit in §60.102a(g)(1) if the SO₂ discharge to the atmosphere is 227 kg (500 lb) greater than the amount that would have been emitted if the emissions limits had been met during one or more consecutive periods of excess emissions or any 24-hour period, whichever is shorter.

(b) A root cause analysis and corrective action analysis must be completed as soon as possible, but no later than 45 days after a discharge meeting the above condition.

(1) If a single continuous discharge meets any of the conditions specified in paragraphs (a) above, for 2 or more consecutive 24-hour periods, a single root cause analysis and corrective action analysis may be conducted.

(2) If discharges occur that meet the conditions specified in paragraph (a) above, for more than one affected facility in the same 24-hour period, initial root cause analyses shall be conducted for each affected facility. If the initial root cause analyses indicate that the discharges have the same root cause(s), the initial root cause analyses can be recorded as a single root cause analysis and a single corrective action analysis may be conducted.

(c) Each owner or operator of a fuel gas combustion device shall implement the corrective action(s) identified in the corrective action analysis conducted pursuant to paragraph (b) above, in accordance with the applicable requirements in paragraphs (1) through (3) below.

(1) All corrective action(s) must be implemented within 45 days of the discharge for which the root cause and corrective action analyses were required or as soon thereafter as practicable. If an owner or operator concludes that corrective action should not be conducted, the owner or operator shall record and explain the basis for that conclusion no later than 45 days following the discharge as specified in 40 C.F.R. § 60.108a(c)(6)(ix).

(2) For corrective actions that cannot be fully implemented within 45 days following the discharge for which the root cause and corrective action analyses were required, the owner or operator shall develop an implementation schedule to complete the corrective action(s) as soon as practicable.

(3) No later than 45 days following the discharge for which a root cause and corrective action analyses were required, the owner or operator shall record the corrective action(s) completed to date, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates as specified in 40 C.F.R. § 60.108a(c)(6)(x).

029 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.7500]**Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters.****What emission limits, work practice standards, and operating limits must I meet?**

[Authority for this permit condition is derived from 40 CFR § 63.7500, Table 3.]

(a) The permittee shall conduct a tune-up of the process heater annually as specified in 40 C.F.R. § 63.7540. Units in the Gas 1 subcategory shall conduct this tune-up as a work practice for all regulated emissions under 40 CFR Part 63, Subpart DDDDD.

(b) The permittee shall conduct a one-time energy assessment performed by a qualified energy assessor. The energy assessment must include the following with extent of the evaluation for items (i) to (v) appropriate for the on-site technical hours listed in §63.7575:

- (i) A visual inspection of the boiler or process heater system.
- (ii) An evaluation of operating characteristics of the boiler or process heater systems, specifications of energy using



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systems, operating and maintenance procedures, and unusual operating constraints.

(iii) An inventory of major energy use systems consuming energy from affected boilers and process heaters and which are under the control of the boiler/process heater owner/operator.

(iv) A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage.

(v) A review of the facility's energy management program and provide recommendations for improvements consistent with the definition of energy management program, if identified.

(vi) A list of cost-effective energy conservation measures that are within the facility's control.

(vii) A list of the energy savings potential of the energy conservation measures identified.

(viii) A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.

030 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.7500]**Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters.****What emission limits, work practice standards, and operating limits must I meet?**

At all times, the permittee shall operate and maintain this source, including associated monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.

031 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.7515]**Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters.****When must I conduct subsequent performance tests or fuel analyses?**

[Authority for this permit condition is derived from 40 C.F.R. § 63.7515(d).]

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If you are required to meet an applicable tune-up work practice standard, you must conduct an annual performance tune-up according to §63.7540(a)(10). Each annual tune-up specified in §63.7540(a)(10) must be no more than 13 months after the previous tune-up. For a new or reconstructed affected source (as defined in §63.7490), the first annual tune-up must be no later than 13 months, after April 1, 2013 or the initial startup of the new or reconstructed affected source, whichever is later.

032 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.7540]**Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters.****How do I demonstrate continuous compliance with the emission limits and work practice standards?**

[Authority for this permit condition is derived from 40 CFR § 63.7540(a)(10).]

The permittee shall conduct an annual tune-up of the process heater to demonstrate continuous compliance as specified in paragraphs (i) through (vi) of this condition. The tune-up shall be conducted while burning refinery fuel gas.

(i) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (you may perform the burner inspection any time prior to the tune-up or delay the burner inspection until the next scheduled unit shutdown). At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment.

(ii) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;



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(iii) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (you may delay the inspection until the next scheduled unit shutdown).

(iv) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NOx requirement to which the unit is subject.

(v) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer, and

(vi) Maintain on-site and submit, if requested by the Administrator, a report containing the information in paragraphs (vi)(A) through (C) of this condition.

(A) The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater;

(B) A description of any corrective actions taken as a part of the tune-up; and

(C) The amount of fuel used over the 12 months prior to the tune-up. Units sharing a fuel meter may estimate the fuel used by each unit.

VII. ADDITIONAL REQUIREMENTS.**# 033 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

This source consists of a Reactor Effluent Heater manufactured by Tulsa Heaters, Inc. with a rated capacity of 99.6 MMBtu/hr. The burners are manufactured by Cullidus with model number CUBL. There are a total of 8 burners, each rated at 12.45 MMBtu/hr. This heater is equipped with a low-NOx burners.



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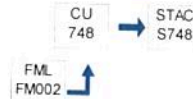
Source ID: 748

Source Name: STRIPPER REBOILER HEATER H-124-02 (H02)

Source Capacity/Throughput 44,200 MMBTU/HR

37,394,000 CF/HR

Refinery Gas

**I. RESTRICTIONS.****Emission Restriction(s).****# 001 [25 Pa. Code §123.11]****Combustion units**

A person may not permit the emission into the outdoor atmosphere of particulate matter from a combustion unit in excess of 0.4 pounds per million Btu of heat input, pursuant to 25 Pa. Code § 123.11(a)(1).

002 [25 Pa. Code §123.22]**Combustion units**

No person may permit the emission into the outdoor atmosphere of sulfur oxides, expressed as SO₂, from any combustion unit, in the Southeast Air Basin, in excess of 1.0 pounds per million Btu of heat input, pursuant to 25 Pa. Code §123.22(e)(1).

003 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

Combined emissions from Sources 747 and 748 shall not exceed the following:

(a) Nitrogen Oxides (NO_x) = 22.04 tons per year, calculated as a 12-month rolling sum.

(b) Volatile Organic Compounds (VOC) = 3.15 tons per year, calculated as a 12-month rolling sum.

(c) Carbon Monoxide (CO) = 17.08 tons per year, calculated as a 12-month rolling sum.

(d) Sulfur Dioxide (SO₂) = 4.42 tons per year, calculated as a 12-month rolling sum.

(e) Particulate Matter (PM_{PM-10}/PM_{2.5}) = 3.15 tons per year, calculated as a 12-month rolling sum.

004 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

NO_x emissions from this source shall not exceed 0.035 lb/MMBtu.

005 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.102a]**SUBPART Ja - Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007****Emissions limitations.**

[Authority for this permit condition is derived from 40 C.F.R. § 60.102a(g).]

The owner or operator shall not burn in any fuel gas combustion device any fuel gas that contains H₂S in excess of 162 ppmv determined hourly on a 3-hour rolling average basis and H₂S in excess of 60 ppmv determined daily on a 365 successive calendar day rolling average basis.

[Compliance with this limit assures compliance with 25 Pa. Code §123.22(e)(1).]

Handwritten note: No CO₂ language



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006 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.102a]
SUBPART Ja - Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007
Emissions limitations.

[Authority for this permit condition is derived from 40 C.F.R. § 60.102a(g)]

For each natural draft process heater with a rated capacity of greater than 40 million British thermal units per hour (MMBtu/hr) on a higher heating value basis, the owner or operator shall not discharge to the atmosphere any emissions of NO_x in excess of 0.040 pounds per million British thermal units (lb/MMBtu) higher heating value basis determined daily on a 30-day rolling average basis.

Fuel Restriction(s).

007 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

This source shall only be fired by refinery fuel gas from the existing North Side Fuel Gas system.

II. TESTING REQUIREMENTS.

008 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

[Additional authority for this permit condition is derived from 40 C.F.R. § 60.104a(a), (c), and (i)]

(a) The permittee shall perform a stack test using Department-approved procedures, to show compliance with the NO_x emission limit set for the source. Source testing shall be performed within 180 days after initial startup of the source. Source testing shall be performed for the following pollutant NO_x. This testing shall be conducted at a normal or average load.

(b) At least sixty (60) days prior to the test, the permittee shall submit to the Department for approval the procedures for the test and a sketch with dimensions indicating the location of sampling ports and other data to ensure the collection of representative samples.

(c) The stack test shall, at a minimum, test for the pollutant NO_x. Tests shall be conducted in accordance with the provisions of 40 C.F.R. § 60.104a(c) and (i) for NO_x and/or other Department approved methodology and 25 Pa. Code Chapter 139.

(d) At least thirty (30) days prior to the test, the Regional Air Quality Manager, shall be informed of the date and time of the test.

(e) Within sixty (60) days after the source test(s), two copies of the complete test report, including all operating conditions, shall be submitted to the Regional Air Quality Manager for approval.

(f) In the event that any of the above deadlines cannot be met, the permittee may request an extension for the due date(s) in writing and include a justification for the extension. The Department may grant an extension for a reasonable cause.

III. MONITORING REQUIREMENTS.

009 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The permittee shall monitor the amount of fuel consumed by this source on a monthly and 12-month rolling basis.

+daily?



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010 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

(a) The fuel gas supplied to this process heater shall be continuously monitored for H₂S concentration and averaged in accordance with 40 C.F.R. Part 60, Subpart Ja, and in accordance with the latest revision of the Department's Continuous Source Monitoring Manual.

(b) NO_x and O₂ concentrations from the exhaust stack of this process heater shall be continuously monitored and averaged in accordance with 40 C.F.R. Part 60, Subpart Ja, and in accordance with the latest revision of the Department's Continuous Source Monitoring Manual.

011 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.107a]

SUBPART Ja - Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007
Monitoring of emissions and operations for fuel gas combustion devices and flares.

The permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H₂S in the fuel gases before being burned in any fuel gas combustion device in accordance with the requirements specified in 40 C.F.R. § 60.107a(a)(2).

012 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.107a]

SUBPART Ja - Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007
Monitoring of emissions and operations for fuel gas combustion devices and flares.

The permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration (dry basis, 0-percent excess air) of NO_x emissions into the atmosphere in accordance with the requirements specified in 40 C.F.R. § 60.107a(d).

IV. RECORDKEEPING REQUIREMENTS.

013 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The permittee shall maintain records of the amount of fuel consumed by this source on a monthly and 12-month rolling basis.

014 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The permittee shall calculate and maintain records of NO_x, VOC, CO, SO₂, and PM₁₀/PM_{2.5} emissions for this source on a monthly and 12-month rolling sum basis.

015 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.108a]

SUBPART Ja - Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007
Recordkeeping and reporting requirements.

[Authority for this permit condition is derived from 40 CFR § 60.108a(c)(6)]

The owner or operator shall maintain the following records:

(1) Records of discharges greater than 500 lb SO₂ in excess of the allowable limits from a fuel gas combustion device in any 24-hour period as required by §60.103a(c). The following information shall be recorded no later than 45 days following the end of a discharge exceeding the thresholds.

(i) A description of the discharge.



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(ii) The date and time the discharge was first identified and the duration of the discharge.

(iii) The measured or calculated cumulative quantity of gas discharged over the discharge duration. If the discharge duration exceeds 24 hours, record the discharge quantity for each 24-hour period. Engineering calculations are allowed for fuel gas combustion devices.

(iv) For each discharge greater than 500 lb SO₂ in excess of the applicable short-term emissions limit in §60.102a(g)(1) from a fuel gas combustion device, either the measured concentration of H₂S in the fuel gas or the measured concentration of SO₂ in the stream discharged to the atmosphere. Process knowledge can be used to make these estimates for fuel gas combustion devices.

(v) For each discharge greater than 500 lb SO₂ in excess of the allowable limits from a fuel gas combustion device, the cumulative quantity of H₂S and SO₂ released into the atmosphere. For fuel gas combustion devices, assume 99-percent conversion of H₂S to SO₂.

(vi) The steps that the owner or operator took to limit the emissions during the discharge.

(vii) The root cause analysis and corrective action analysis conducted as required in §60.103a(d), including an identification of the affected facility, the date and duration of the discharge, a statement noting whether the discharge resulted from the same root cause(s) identified in a previous analysis and either a description of the recommended corrective action(s) or an explanation of why corrective action is not necessary under §60.103a(e).

(viii) For any corrective action analysis for which corrective actions are required in §60.103a(e), a description of the corrective action(s) completed within the first 45 days following the discharge and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.

016 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.7555]

Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters.

What records must I keep?

[Authority for this permit condition is derived from 40 C.F.R. § 63.7555(a)(1)-(2).]

The permittee shall keep records of the following:

(1) A copy of each notification and report submitted to comply with 40 CFR Part 63, Subpart DDDDD, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report submitted, according to the requirements in §63.10(b)(2)(xv).

(2) Records of performance tests, fuel analyses, or other compliance demonstrations and performance evaluations as required in §63.10(b)(2)(vii).

017 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.7560]

Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters.

In what form and how long must I keep my records?

[Authority for this permit condition is derived from 40 C.F.R. § 63.7560.]

(a) Records shall be maintained in a form suitable and readily available for expeditious review, according to 40 C.F.R. § 63.10(b)(1).

(b) As specified in 40 C.F.R. § 63.10(b)(1), the permittee shall keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) The permittee shall keep each record on site, or they must be accessible from on site (for example, through a computer



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network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 C.F.R. § 63.10(b)(1). You can keep the records off site for the remaining 3 years.

V. REPORTING REQUIREMENTS.

018 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The permittee shall submit reports of H₂S and NO_x monitoring data on a quarterly basis in accordance with 40 CFR Part 60, Subpart Ja, and in accordance with the latest revision of the Department's Continuous Source Monitoring Manual.

019 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.107a]

SUBPART Ja - Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007

Monitoring of emissions and operations for fuel gas combustion devices and flares.

The permittee shall comply with the requirements for excess emissions as outlined in 40 C.F.R. § 60.107a(i).

020 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.108a]

SUBPART Ja - Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007

Recordkeeping and reporting requirements.

[Authority for this permit condition is derived from 40 CFR § 60.108a(a) & (b).]

(a) Each owner or operator subject to the emissions limitations in 40 C.F.R. § 60.102a shall comply with the notification, recordkeeping, and reporting requirements in §60.7 and other requirements as specified in this condition.

(b) Each owner or operator subject to an emissions limitation in 40 C.F.R. § 60.102a shall notify the Administrator of the specific monitoring provisions of § 60.107a with which the owner or operator intends to comply. This notification shall be submitted with the notification of initial startup required by §60.7(a)(3).

021 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.108a]

SUBPART Ja - Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007

Recordkeeping and reporting requirements.

[Authority for this permit condition is derived from 40 CFR § 60.108a(d).]

Each owner or operator subject to Subpart Ja shall submit an excess emissions report for all periods of excess emissions according to the requirements of §60.7(c) except that the report shall contain the information specified in paragraphs (1) through (7) below.

(1) The date that the exceedance occurred;

(2) An explanation of the exceedance;

(3) Whether the exceedance was concurrent with a startup, shutdown, or malfunction of an affected facility or control system; and

(4) A description of the action taken, if any.

(5) The information described in 40 CFR § 60.108a(c)(6) for all discharges listed in paragraph (c)(6).

(6) For any periods for which monitoring data are not available, any changes made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission

**SECTION D. Source Level Plan Approval Requirements**

limit. Operations of the control system and affected facility during periods of data unavailability are to be compared with operation of the control system and affected facility before and following the period of data unavailability.

(7) A written statement, signed by a responsible official, certifying the accuracy and completeness of the information contained in the report.

**# 022 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4]
Subpart A - General Provisions**

Address.

This source is subject to 40 CFR Part 60, Subpart Ja - Standards of Performance for New Stationary Sources, and shall comply with all applicable requirements of this Subpart.

Pursuant to 40 CFR Section 60.4, the permittee shall submit copies of all requests, reports, applications, submittals, and other communications to both EPA and the appropriate Regional Office of the Department. The EPA copies shall be forwarded to:

Air Enforcement Branch, Mail Code 3AP12
US EPA, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Any variations from the compliance monitoring, testing, and reporting methods specified in the New Source Performance Standards shall be approved in advance by the U.S. EPA.

023 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.13]

Subpart A--General Provisions

Addresses of State air pollution control agencies and EPA Regional Offices.

This source is subject to 40 CFR Part 63 Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants, and shall comply with all applicable requirements of this Subpart.

Pursuant to 40 CFR § 63.13, the permittee shall submit copies of all requests, reports, applications, submittals, and other communications to both EPA and the appropriate Regional Office of the Department. The EPA copies shall be forwarded to:

Air Enforcement Branch, Mail Code 3AP12
US EPA, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Any variations from the compliance monitoring, testing, and reporting methods specified in the National Emission Standards for Hazardous Air Pollutants shall be approved in advance by the U.S. EPA.

024 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.7545]

Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters.

What notifications must I submit and when?

[Authority for this permit condition is derived from 40 CFR § 63.7545(a).]

The permittee shall submit to the Administrator all of the notifications in 40 CFR § 63.9(b) through (h), that are applicable by the dates specified.

025 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.7550]

Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters.



SECTION D. Source Level Plan Approval Requirements

What reports must I submit and when?

- (a) The permittee shall submit semi-annual compliance reports in accordance with 40 C.F.R. § 63.7550(b)(5), (c)(5), and (h)(3).
- (b) The compliance report shall contain the following information:
- (i) Company and Facility name and address.
 - (ii) Process unit information, emissions limitations, and operating parameter limitations.
 - (iii) Date of report and beginning and ending dates of the reporting period.
 - (iv) Include the date of the most recent tune-up.
 - (v) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.
 - (vi) The total operating time during the reporting period.
- (c) The permittee shall submit all reports required by Table 9 of 40 CFR Part 63, Subpart DDDDD electronically to the EPA via the CEDRI. (CEDRI can be accessed through the EPA's CDX.) The permittee shall use the appropriate electronic report in CEDRI for this subpart. Instead of using the electronic report in CEDRI for this subpart, you may submit an alternate electronic file consistent with the XML schema listed on the CEDRI Web site (<http://www.epa.gov/ttn/chieff/cedr/index.html>), once the XML schema is available. If the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, you must submit the report to the Administrator at the appropriate address listed in 40 C.F.R. § 63.13. You must begin submitting reports via CEDRI no later than 90 days after the form becomes available in CEDRI.

VI. WORK PRACTICE REQUIREMENTS.**# 026 [25 Pa. Code § 127.12b]****Plan approval terms and conditions.**

This source shall be operated and maintained in a manner consistent with good operating and maintenance practices, and in accordance with manufacturer's specifications.

027 [25 Pa. Code § 127.12b]**Plan approval terms and conditions.**

Continuous Emission Monitoring Systems and components must be operated and maintained in accordance with the requirements established in 25 Pa. Code Chapter 139, Subchapter C (relating to requirements for source monitoring for stationary sources), and the "Quality Assurance" requirements in the Department's Continuous Source Monitoring Manual, Revision No. 8, 274-0300-001.

Compliance with any subsequently issued revision to the Continuous Monitoring Source Manual will constitute compliance with this permit condition.

028 [40 CFR Part 60 Standards of Performance for New Stationary Sources § 40 CFR 60.103a]**SUBPART Ja - Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007****Work practice standards.**

[Authority for this permit condition is derived from 40 CFR § 60.103a(c)(2), (d)(1) & (5), and (e)(1)-(3).]

- (a) Each owner or operator that operates a fuel gas combustion device shall conduct a root cause analysis and a corrective action analysis for each exceedance of an applicable short-term emissions limit in § 60.102a(g)(1) if the SO₂ discharge to the atmosphere is 227 kg (500 lb) greater than the amount that would have been emitted if the emissions limits had been



SECTION D. Source Level Plan Approval Requirements

met during one or more consecutive periods of excess emissions or any 24-hour period, whichever is shorter.

- (b) A root cause analysis and corrective action analysis must be completed as soon as possible, but no later than 45 days after a discharge meeting the above condition.

(1) If a single continuous discharge meets any of the conditions specified in paragraphs (a) above, for 2 or more consecutive 24-hour periods, a single root cause analysis and corrective action analysis may be conducted.

(2) If discharges occur that meet the conditions specified in paragraph (a) above, for more than one affected facility in the same 24-hour period, initial root cause analyses shall be conducted for each affected facility. If the initial root cause analyses indicate that the discharges have the same root cause(s), the initial root cause analyses can be recorded as a single root cause analysis and a single corrective action analysis may be conducted.

(c) Each owner or operator of a fuel gas combustion device shall implement the corrective action(s) identified in the corrective action analysis conducted pursuant to paragraph (b) above, in accordance with the applicable requirements in paragraphs (1) through (3) below.

(1) All corrective action(s) must be implemented within 45 days of the discharge for which the root cause and corrective action analyses were required or as soon thereafter as practicable. If an owner or operator concludes that corrective action should not be conducted, the owner or operator shall record and explain the basis for that conclusion no later than 45 days following the discharge as specified in 40 C.F.R. § 60.108a(c)(6)(ix).

(2) For corrective actions that cannot be fully implemented within 45 days following the discharge for which the root cause and corrective action analyses were required, the owner or operator shall develop an implementation schedule to complete the corrective action(s) as soon as practicable.

(3) No later than 45 days following the discharge for which a root cause and corrective action analyses were required, the owner or operator shall record the corrective action(s) completed to date, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates as specified in 40 C.F.R. § 60.108a(c)(6)(x).

029 [40 CFR Part 63 NESHAPS for Source Categories § 40 CFR 63.7500]**Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters.****What emission limits, work practice standards, and operating limits must I meet?**

[Authority for this permit condition is derived from 40 CFR § 63.7500, Table 3.]

- (a) The permittee shall conduct a tune-up of the process heater annually as specified in 40 C.F.R. § 63.7540. Units in the Gas 1 subcategory shall conduct this tune-up as a work practice for all regulated emissions under 40 CFR Part 63, Subpart DDDDD.

(b) The permittee shall conduct a one-time energy assessment performed by a qualified energy assessor. The energy assessment must include the following with extent of the evaluation for items (i) to (v) appropriate for the on-site technical hours listed in § 63.7575:

- (i) A visual inspection of the boiler or process heater system.
- (ii) An evaluation of operating characteristics of the boiler or process heater systems, specifications of energy using systems, operating and maintenance procedures, and unusual operating constraints.
- (iii) An inventory of major energy use systems consuming energy from affected boilers and process heaters and which are under the control of the boiler/process heater owner/operator.
- (iv) A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage.



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- (v) A review of the facility's energy management program and provide recommendations for improvements consistent with the definition of energy management program, if identified.
- (vi) A list of cost-effective energy conservation measures that are within the facility's control.
- (vii) A list of the energy savings potential of the energy conservation measures identified.
- (viii) A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.

030 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.7500]**Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters.****What emission limits, work practice standards, and operating limits must I meet?**

At all times, the permittee shall operate and maintain this source, including associated monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.

031 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.7515]**Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters.****When must I conduct subsequent performance tests or fuel analyses?**

[Authority for this permit condition is derived from 40 C.F.R. § 63.7515(d).]

If you are required to meet an applicable tune-up work practice standard, you must conduct an annual performance tune-up according to §63.7540(a)(10). Each annual tune-up specified in §63.7540(a)(10) must be no more than 13 months after the previous tune-up. For a new or reconstructed affected source (as defined in §63.7490), the first annual tune-up must be no later than 13 months after April 1, 2013 or the initial startup of the new or reconstructed affected source, whichever is later.

032 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.7540]**Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters.****How do I demonstrate continuous compliance with the emission limits and work practice standards?**

[Authority for this permit condition is derived from 40 CFR § 63.7540(a)(10).]

The permittee shall conduct an annual tune-up of the process heater to demonstrate continuous compliance as specified in paragraphs (i) through (v) of this condition. The tune-up shall be conducted while burning refinery fuel gas.

- (i) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (you may perform the burner inspection any time prior to the tune-up or delay the burner inspection until the next scheduled unit shutdown). At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment.
- (ii) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available.
- (iii) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (you may delay the inspection until the next scheduled unit shutdown).
- (iv) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NOx requirement to which the unit is subject.
- (v) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same



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basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer, and

- (vi) Maintain on-site and submit, if requested by the Administrator, a report containing the information in paragraphs (vi)(A) through (C) of this condition:

(A) The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater;

(B) A description of any corrective actions taken as a part of the tune-up; and

(C) The amount of fuel used over the 12 months prior to the tune-up. Units sharing a fuel meter may estimate the fuel used by each unit.

VII. ADDITIONAL REQUIREMENTS.

033 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

This source consists of a Stripper Reboiler Heater manufactured by Tulsa Heaters, Inc. with a rated capacity of 44.2 MMBtu/hr. The burners are manufactured by Cullidus with model number CUBL. There are a total of 4 burners, each rated at 11.05 MMBtu/hr. This heater is equipped with a low-NOx burners.

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**SECTION D. Source Level Plan Approval Requirements**

Source ID: 101

Source Name: FCC UNIT

Source Capacity/Throughput

I. RESTRICTIONS.

No additional requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements)

II. TESTING REQUIREMENTS.

No additional testing requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements)

III. MONITORING REQUIREMENTS.

No additional monitoring requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements)

IV. RECORDKEEPING REQUIREMENTS.

No additional record keeping requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements)

V. REPORTING REQUIREMENTS.

No additional reporting requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements)

VI. WORK PRACTICE REQUIREMENTS.

No additional work practice requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements)

VII. ADDITIONAL REQUIREMENTS.

001 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The permittee shall continue to comply with all applicable requirements of 40 CFR, Part 63 Subpart UUU for its existing FCC Unit, as specified in the current TVOP No. 23-00003 for Source ID 101.



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**SECTION D. Source Level Plan Approval Requirements**

Source ID: 102

Source Name: CLAUS SULFUR RECOV. PLT

Source Capacity/Throughput

I. RESTRICTIONS.

No additional requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements)

II. TESTING REQUIREMENTS.

No additional testing requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements)

III. MONITORING REQUIREMENTS.

No additional monitoring requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements)

IV. RECORDKEEPING REQUIREMENTS.

No additional record keeping requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements)

V. REPORTING REQUIREMENTS.

No additional reporting requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements)

VI. WORK PRACTICE REQUIREMENTS.

No additional work practice requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements)

VII. ADDITIONAL REQUIREMENTS.

001 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The permittee shall continue to comply with all applicable requirements of 40 CFR, Part 63 Subpart UUU for its existing SRU Unit, as specified in the current TVOP No. 23-00003 for Source ID 102.



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**SECTION D. Source Level Plan Approval Requirements**

Source ID: 103 Source Name: MAIN FLARE
 Source Capacity/Throughput:

I. RESTRICTIONS.

No additional requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

II. TESTING REQUIREMENTS.

No additional testing requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

III. MONITORING REQUIREMENTS.

No additional monitoring requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

IV. RECORDKEEPING REQUIREMENTS.

No additional record keeping requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

V. REPORTING REQUIREMENTS.

No additional reporting requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

VI. WORK PRACTICE REQUIREMENTS.

No additional work practice requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

VII. ADDITIONAL REQUIREMENTS.

001 [25 Pa. Code §127.12b]
Plan approval terms and conditions.

The permittee shall continue to comply with all applicable requirements of 40 CFR, Part 63 Subpart UUU for its existing Main Flare, as specified in the current TVOP No. 23-00003 for Source ID 103.



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**SECTION D. Source Level Plan Approval Requirements**

Source ID: 114 Source Name: RACT FUGITIVE EQUIPMENT
 Source Capacity/Throughput:

I. RESTRICTIONS.

No additional requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

II. TESTING REQUIREMENTS.

No additional testing requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

III. MONITORING REQUIREMENTS.

No additional monitoring requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

IV. RECORDKEEPING REQUIREMENTS.

No additional record keeping requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

V. REPORTING REQUIREMENTS.

No additional reporting requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

VI. WORK PRACTICE REQUIREMENTS.

No additional work practice requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

VII. ADDITIONAL REQUIREMENTS.

001 [25 Pa. Code §127.12b]
Plan approval terms and conditions.

a. The permittee shall comply with the current TVOP requirements for Source ID 114 for the new fugitive components.

b. Prior to the issuance of the Operating Permit, the permittee shall provide to the Department a list of the components that are affected by the ULSG Project and are subject to 25 Pa. Code § 129.58, the applicable requirements for the components, and the methods of complying with the requirements.



SECTION D. Source Level Plan Approval Requirements

(3) Monitoring frequency and leak action level for existing sources. For a heat exchange system at an existing source, the owner or operator must comply with the monitoring frequency and leak action level as defined in paragraph (3)(i) of this section or comply with the monitoring frequency and leak action level as defined in paragraph (3)(ii) of this section. The owner or operator of an affected heat exchange system may choose to comply with paragraph (3)(i) of this section for some heat exchange systems at the petroleum refinery and comply with paragraph (3)(ii) of this section for other heat exchange systems. However, for each affected heat exchange system, the owner or operator of an affected heat exchange system must elect one monitoring alternative that will apply at all times. If the owner or operator intends to change the monitoring alternative that applies to a heat exchange system, the owner or operator must notify the Administrator 30 days in advance of such a change. All "leaks" identified prior to changing monitoring alternatives must be repaired.

(i) Monitor monthly using a leak action level defined as a total strippable hydrocarbon concentration (as methane) in the stripping gas of 6.2 ppmv.

(ii) Monitor quarterly using a leak action level defined as a total strippable hydrocarbon concentration (as methane) in the stripping gas of 3.1 ppmv unless repair is delayed as provided in paragraph (f) of this section. If a repair is delayed as provided in paragraph (f) of this section, monitor monthly.

(4) Leak definition. A leak for this source is defined as follows.

(i) A leak is detected if a measurement value of the sample taken from a location specified in either paragraph (1)(i) or (1)(ii) of this section equals or exceeds the leak action level.

IV. RECORDKEEPING REQUIREMENTS.

005 [25 Pa. Code § 127.12b]

Plan approval terms and conditions.

(a) The permittee shall maintain records of the total dissolved solids (TDS) concentrations in the cooling tower water on a monthly basis.

(b) The permittee shall maintain records of the monthly operating minutes.

(c) The permittee shall perform and maintain records of VOC emission calculations on a monthly and 12-month rolling basis.

(d) The permittee shall maintain records of the monthly PM emissions calculated using monthly operating minutes, the TDS content measured monthly, and the water recirculation rate of 10,200 gallons per minute (GPM).

006 [40 CFR Part 63 NESHAPS for Source Categories § 40 CFR 63.655]

Subpart CC -- National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries Reporting and recordkeeping requirements.

[Authority for this permit condition is derived from 40 CFR § 63.655(i)(4).]

The owner or operator of a heat exchange system subject to this subpart shall comply with the recordkeeping requirements in paragraphs (i) through (v) of this section and retain these records for 5 years.

(i) Identification of all petroleum refinery process unit heat exchangers at the facility and the average annual HAP concentration of process fluid or intervening cooling fluid estimated when developing the Notification of Compliance Status report.

(ii) Identification of all heat exchange systems subject to the monitoring requirements in 40 C.F.R. § 63.654 and identification of all heat exchange systems that are exempt from the monitoring requirements according to the provisions in 40 C.F.R. § 63.654(b). For each heat exchange system that is subject to the monitoring requirements in 40 C.F.R. § 63.654, this must include identification of all heat exchangers within each heat exchange system, and, for closed-loop recirculation systems, the cooling tower included in each heat exchange system.



SECTION D. Source Level Plan Approval Requirements

(iii) Results of the following monitoring data for each required monitoring event:

(A) Date/time of event.

(B) Barometric pressure.

(C) El Paso air stripping apparatus water flow milliliter/minute (ml/min) and air flow, ml/min, and air temperature, °Celsius.

(D) FID reading (ppmv).

(E) Length of sampling period.

(F) Sample volume.

(G) Calibration information identified in Section 5.4.2 of the "Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources" Revision Number One, dated January 2003, Sampling Procedures Manual, Appendix P, Cooling Tower Monitoring, prepared by Texas Commission on Environmental Quality, January 31, 2003 (incorporated by reference—see § 63.14).

(iv) The date when a leak was identified, the date the source of the leak was identified, and the date when the heat exchanger was repaired or taken out of service.

(v) If a repair is delayed, the reason for the delay, the schedule for completing the repair, the heat exchange exit line flow or cooling tower return line average flow rate at the monitoring location (in gallons/minute), and the estimate of potential strippable hydrocarbon emissions for each required monitoring interval during the delay of repair.

V. REPORTING REQUIREMENTS.

007 [40 CFR Part 63 NESHAPS for Source Categories § 40 CFR 63.655]

Subpart CC -- National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries Reporting and recordkeeping requirements.

[Authority for this permit condition is derived from 40 C.F.R. § 63.655(e).]

Each owner or operator of a source subject to 40 CFR Part 63, Subpart CC shall submit the reports listed in paragraphs (1) through (3) of this condition except as provided in 40 C.F.R. § 63.655(h)(5), and shall keep records as described in 40 C.F.R. § 63.655(i).

(1) A Notification of Compliance Status report as described in 40 C.F.R. § 63.655(f).

(2) Periodic Reports as described in 40 C.F.R. § 63.655(g); and

(3) Other reports as described in 40 C.F.R. § 63.655(h).

008 [40 CFR Part 63 NESHAPS for Source Categories § 40 CFR 63.655]

Subpart CC -- National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries Reporting and recordkeeping requirements.

[Authority for this permit condition is derived from 40 CFR § 63.655(f)(1)(v).]

The permittee shall submit a Notification of Compliance Status report as specified in 40 C.F.R. § 63.655(f). The Notification of Compliance Status report shall include identification of the heat exchange systems that are subject to the requirements of 40 C.F.R. Part 63, Subpart CC and for heat exchange systems at existing sources, the owner or operator shall indicate whether monitoring will be conducted as specified in 40 C.F.R. § 63.654(c)(4)(i) or § 63.654(c)(4)(ii).



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**SECTION D. Source Level Plan Approval Requirements**

Source ID: 215 Source Name: NSPS NEW FUGITIVE EQUIPMENT
Source Capacity/Throughput:

I. RESTRICTIONS.

No additional requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

II. TESTING REQUIREMENTS.

No additional testing requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

III. MONITORING REQUIREMENTS.

No additional monitoring requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

IV. RECORDKEEPING REQUIREMENTS.

No additional record keeping requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

V. REPORTING REQUIREMENTS.

No additional reporting requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

VI. WORK PRACTICE REQUIREMENTS.

No additional work practice requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

VII. ADDITIONAL REQUIREMENTS.

**# 001 [25 Pa. Code §127.12b]
Plan approval terms and conditions.**

(a) The permittee shall install, operate, and maintain the affected components in accordance with the requirements in its current TVOP No. 23-00003 for Source ID 215.

(b) Prior to the issuance of the Operating Permit, the permittee shall provide to the Department a list of the components that are affected by the ULSG Project and are subject to 40 CFR Part 60 Subpart GGGa, the applicable requirements for the components, and the methods of complying with the requirements.

why not a plan app? Must undergo TV review? is for a equipment



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**SECTION D. Source Level Plan Approval Requirements**

Source ID: 702 Source Name: ULSG COOLING TOWER
Source Capacity/Throughput: 612,000.000 Gal/HR

NEW UNIT
COOLING WATER

PROC 702 → CNTL C702 → STAC Z702

I. RESTRICTIONS.**Emission Restriction(s).**

001 [25 Pa. Code §123.13]

Processes

No person may permit the emission into the outdoor atmosphere of particulate matter from this source in excess of 0.02 gr/dscf, pursuant to 25 Pa. Code § 123.13 (c)(1)(iii).

002 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The permittee shall limit VOC emissions from this cooling tower to 6.02 tons per year, based on a 12-month rolling sum.

II. TESTING REQUIREMENTS.

003 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The permittee shall measure the total dissolved solids (TDS) content of the cooling water in the cooling tower once per month. The method(s) for TDS content measurement shall be approved by DEP prior to the operation of the cooling tower.

III. MONITORING REQUIREMENTS.

004 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.654]

Subpart CC -- National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries Heat exchange systems.

[Authority for this permit condition is derived from 40 CFR § 63.654(c).]

The permittee shall perform monitoring to identify leaks of total strippable volatile organic compounds (VOC) from each heat exchange system subject to the requirements 40 C.F.R. Part 63, Subpart CC according to the procedures in paragraphs (1) through (4) of this condition.

(1) Monitoring locations for closed-loop recirculation heat exchange systems. For each closed loop recirculating heat exchange system, collect and analyze a sample from the location(s) described in either paragraph (1)(i) or (1)(ii) of this condition.

(i) Each cooling tower return line or any representative riser within the cooling tower prior to exposure to air for each heat exchange system.

(ii) Selected heat exchanger exit line(s) so that each heat exchanger or group of heat exchangers within a heat exchange system is covered by the selected monitoring location(s).

(2) Monitoring method. Determine the total strippable hydrocarbon concentration (in parts per million by volume (ppmv) as methane) at each monitoring location using the "Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources" Revision Number One, dated January 2003, Sampling Procedures Manual, Appendix P. Cooling Tower Monitoring, prepared by Texas Commission on Environmental Quality, January 31, 2003 (incorporated by reference—see §63.14) using a flame ionization detector (FID) analyzer for on-site determination as described in Section 6.1 of the Modified El Paso Method.



SECTION D. Source Level Plan Approval Requirements

(3) Monitoring frequency and leak action level for existing sources. For a heat exchange system at an existing source, the owner or operator must comply with the monitoring frequency and leak action level as defined in paragraph (3)(i) of this section or comply with the monitoring frequency and leak action level as defined in paragraph (3)(ii) of this section. The owner or operator of an affected heat exchange system may choose to comply with paragraph (3)(i) of this section for some heat exchange systems at the petroleum refinery and comply with paragraph (3)(ii) of this section for other heat exchange systems. However, for each affected heat exchange system, the owner or operator of an affected heat exchange system must ~~elect one monitoring alternative~~ that will apply at all times. If the owner or operator intends to change the monitoring alternative that applies to a heat exchange system, the owner or operator must notify the Administrator 30 days in advance of such a change. All "leaks" identified prior to changing monitoring alternatives must be repaired.

(i) Monitor monthly using a leak action level defined as a total strippable hydrocarbon concentration (as methane) in the stripping gas of 6.2 ppmv.

(ii) Monitor quarterly using a leak action level defined as a total strippable hydrocarbon concentration (as methane) in the stripping gas of 3.1 ppmv unless repair is delayed as provided in paragraph (f) of this section. If a repair is delayed as provided in paragraph (f) of this section, monitor monthly.

(4) Leak definition. A leak for this source is defined as follows:

(i) A leak is detected if a measurement value of the sample taken from a location specified in either paragraph (1)(i) or (1)(ii) of this section equals or exceeds the leak action level.

IV. RECORDKEEPING REQUIREMENTS.

005 [25 Pa. Code § 127.12b]
Plan approval terms and conditions.

(a) The permittee shall maintain records of the total dissolved solids (TDS) concentrations in the cooling tower water on a monthly basis.

(b) The permittee shall maintain records of the monthly operating minutes.

(c) The permittee shall perform and maintain records of VOC emission calculations on a monthly and 12-month rolling basis.

(d) The permittee shall maintain records of the monthly PM emissions calculated using monthly operating minutes, the TDS content measured monthly, and the water recirculation rate of 10,200 gallons per minute (GPM).

006 [40 CFR Part 63 NESHAPS for Source Categories § 40 CFR 63.655]
Subpart CC -- National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries
Reporting and recordkeeping requirements.

[Authority for this permit condition is derived from 40 CFR § 63.655(i)(4).]

The owner or operator of a heat exchange system subject to this subpart shall comply with the recordkeeping requirements in paragraphs (i) through (v) of this section and retain these records for 5 years.

(i) Identification of all petroleum refinery process unit heat exchangers at the facility and the average annual HAP concentration of process fluid or intervening cooling fluid estimated when developing the Notification of Compliance Status report.

(ii) Identification of all heat exchange systems subject to the monitoring requirements in 40 C.F.R. § 63.654 and identification of all heat exchange systems that are exempt from the monitoring requirements according to the provisions in 40 C.F.R. § 63.654(b). For each heat exchange system that is subject to the monitoring requirements in 40 C.F.R. § 63.654, this must include identification of all heat exchangers within each heat exchange system, and, for closed-loop recirculation systems, the cooling tower included in each heat exchange system.



SECTION D. Source Level Plan Approval Requirements

(iii) Results of the following monitoring data for each required monitoring event:

(A) Date/time of event.

(B) Barometric pressure.

(C) El Paso air stripping apparatus water flow milliliter/minute (ml/min) and air flow, ml/min, and air temperature, °Celsius.

(D) FID reading (ppmv).

(E) Length of sampling period.

(F) Sample volume.

(G) Calibration information identified in Section 5.4.2 of the "Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources" Revision Number One, dated January 2003, Sampling Procedures Manual, Appendix P: Cooling Tower Monitoring, prepared by Texas Commission on Environmental Quality, January 31, 2003 (incorporated by reference—see § 63.14).

(iv) The date when a leak was identified, the date the source of the leak was identified, and the date when the heat exchanger was repaired or taken out of service.

(v) If a repair is delayed, the reason for the delay, the schedule for completing the repair, the heat exchange ext line flow or cooling tower return line average flow rate at the monitoring location (in gallons/minute), and the estimate of potential strippable hydrocarbon emissions for each required monitoring interval during the delay of repair.

V. REPORTING REQUIREMENTS.

007 [40 CFR Part 63 NESHAPS for Source Categories § 40 CFR 63.655]
Subpart CC -- National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries
Reporting and recordkeeping requirements.

[Authority for this permit condition is derived from 40 C.F.R. § 63.655(e).] *2005-12-20 app 5.2*

Each owner or operator of a source subject to 40 CFR Part 63, Subpart CC shall submit the reports listed in paragraphs (1) through (3) of this condition except as provided in 40 C.F.R. § 63.655(h)(5), and shall keep records as described in 40 C.F.R. § 63.655(i).

(1) A Notification of Compliance Status report as described in 40 C.F.R. § 63.655(f).

(2) Periodic Reports as described in 40 C.F.R. § 63.655(g), and;

(3) Other reports as described in 40 C.F.R. § 63.655(h).

008 [40 CFR Part 63 NESHAPS for Source Categories § 40 CFR 63.655]
Subpart CC -- National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries
Reporting and recordkeeping requirements.

[Authority for this permit condition is derived from 40 CFR § 63.655(f)(1)(v).]

The permittee shall submit a Notification of Compliance Status report as specified in 40 C.F.R. § 63.655(f). The Notification of Compliance Status report shall include identification of the heat exchange systems that are subject to the requirements of 40 C.F.R. Part 63, Subpart CC and for heat exchange systems at existing sources, the owner or operator shall indicate whether monitoring will be conducted as specified in 40 C.F.R. § 63.654(c)(4)(i) or § 63.654(c)(4)(ii).



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MONROE ENERGY LLC/TRAINER



SECTION D. Source Level Plan Approval Requirements

**# 009 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.655]
Subpart CC -- National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries
Reporting and recordkeeping requirements.**

[Authority for this permit condition is derived from 40 C.F.R. § 63.655(g)(9)]

The permittee shall submit Periodic Reports as specified in 40 C.F.R. § 63.655(g).

For heat exchange systems, Periodic Reports must include the following information:

- (i) The number of heat exchange systems at the plant site subject to the monitoring requirements in 40 C.F.R. § 63.654.
- (ii) The number of heat exchange systems at the plant site found to be leaking.
- (iii) For each monitoring location where the total strippable hydrocarbon concentration was determined to be equal to or greater than the applicable leak definitions specified in 40 C.F.R. § 63.654(c)(6), identification of the monitoring location (e.g., unique monitoring location or heat exchange system ID number), the measured total strippable hydrocarbon concentration, the date the leak was first identified, and, if applicable, the date the source of the leak was identified;
- (iv) For leaks that were repaired during the reporting period (including delayed repairs), identification of the monitoring location associated with the repaired leak, the total strippable hydrocarbon concentration measured during re-monitoring to verify repair, and the re-monitoring date (i.e., the effective date of repair); and
- (v) For each delayed repair, identification of the monitoring location associated with the leak for which repair is delayed, the date when the delay of repair began, the date the repair is expected to be completed (if the leak is not repaired during the reporting period), the total strippable hydrocarbon concentration and date of each monitoring event conducted on the delayed repair during the reporting period, and an estimate of the potential strippable hydrocarbon emissions over the reporting period associated with the delayed repair.

**# 010 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.655]
Subpart CC -- National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries
Reporting and recordkeeping requirements.**

The owner or operator of a heat exchange system at an existing source must notify the Administrator at least 30 calendar days prior to changing from one of the monitoring options specified in §63.654(c)(4) to the other.

VI. WORK PRACTICE REQUIREMENTS.

**# 011 [25 Pa. Code §127.12b]
Plan approval terms and conditions.**

This source and control device shall be operated and maintained in accordance with manufacturer's specifications.

**# 012 [25 Pa. Code §127.12b]
Plan approval terms and conditions.**

The drift eliminators associated with this cooling tower shall be designed to achieve a drift rate of 0.0005%.

**# 013 [25 Pa. Code §127.12b]
Plan approval terms and conditions.**

The permittee shall not use chromium based water treatment chemicals in this source.

**# 014 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.654]
Subpart CC -- National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries
Heat exchange systems.**



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MONROE ENERGY LLC/TRAINER



SECTION D. Source Level Plan Approval Requirements

[Authority for this permit condition is derived from 40 C.F.R. § 63.654(d)-(g).]

(a) If a leak is detected, the owner or operator must repair the leak to reduce the measured concentration to below the applicable action level as soon as practicable, but no later than 45 days after identifying the leak, except as specified in paragraphs (b) and (c) of this condition. Repair includes re-monitoring at the monitoring location where the leak was identified according to the method specified in 40 C.F.R. § 63.654(c)(3) of this section to verify that the measured concentration is below the applicable action level. Actions that can be taken to achieve repair include but are not limited to:

- (1) Physical modifications to the leaking heat exchanger, such as welding the leak or replacing a tube;
- (2) Blocking the leaking tube within the heat exchanger;
- (3) Changing the pressure so that water flows into the process fluid;
- (4) Replacing the heat exchanger or heat exchanger bundle; or
- (5) Isolating, bypassing, or otherwise removing the leaking heat exchanger from service until it is otherwise repaired.

(b) If the owner or operator detects a leak when monitoring a cooling tower return line under 40 CFR § 63.654(c)(1)(i), the owner or operator may conduct additional monitoring of each heat exchanger or group of heat exchangers associated with the heat exchange system for which the leak was detected as provided under 40 CFR § 63.654(c)(1)(ii). If no leaks are detected when monitoring according to the requirements of paragraph 40 CFR § 63.654(c)(1)(ii), the heat exchange system is considered to meet the repair requirements through re-monitoring of the heat exchange system as provided in paragraph (a) of this condition.

(c) The owner or operator may delay the repair of a leaking heat exchanger when one of the conditions in paragraph (c)(1) or (c)(2) of this condition is met and the leak is less than the delay of repair action level specified in paragraph (c)(3) of this condition. The owner or operator must determine if a delay of repair is necessary as soon as practicable, but no later than 45 days after first identifying the leak.

(1) If the repair is technically infeasible without a shutdown and the total strippable hydrocarbon concentration is initially and remains less than the delay of repair action level for all monthly monitoring periods during the delay of repair, the owner or operator may delay repair until the next scheduled shutdown of the heat exchange system. If, during subsequent monthly monitoring, the delay of repair action level is exceeded, the owner or operator must repair the leak within 30 days of the monitoring event in which the leak was equal to or exceeded the delay of repair action level.

(2) If the necessary equipment, parts, or personnel are not available and the total strippable hydrocarbon concentration is initially and remains less than the delay of repair action level for all monthly monitoring periods during the delay of repair, the owner or operator may delay the repair for a maximum of 120 calendar days. The owner or operator must demonstrate that the necessary equipment, parts, or personnel were not available. If, during subsequent monthly monitoring, the delay of repair action level is exceeded, the owner or operator must repair the leak within 30 days of the monitoring event in which the leak was equal to or exceeded the delay of repair action level.

(3) The delay of repair action level is a total strippable hydrocarbon concentration (as methane) in the stripping gas of 62 ppmv. The delay of repair action level is assessed as described in paragraph (c)(3)(i) of this condition.

(i) The delay of repair action level is exceeded if a measurement value of the sample taken from a location specified in either paragraphs 40 C.F.R. § 63.654(c)(1)(i) or (c)(1)(ii) equals or exceeds the delay of repair action level.

(d) To delay the repair under paragraph (c) of this condition, the owner or operator must record the information in paragraphs (d)(1) through (4).

- (1) The reason(s) for delaying repair.
- (2) A schedule for completing the repair as soon as practical.

**SECTION D. Source Level Plan Approval Requirements**

(3) The date and concentration of the leak as first identified and the results of all subsequent monthly monitoring events during the delay of repair.

(4) An estimate of the potential strippable hydrocarbon emissions from the leaking heat exchange system or heat exchanger for each required delay of repair monitoring interval following the procedures in paragraphs (d)(4)(i) through (iv) of this condition.

(i) Determine the leak concentration as specified in 40 C.F.R. § 63.654(c) and convert the stripping gas leak concentration (in ppmv as methane) to an equivalent liquid concentration, in parts per million by weight (ppmw), using equation 7-1 from "Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources" Revision Number One, dated January 2003, Sampling Procedures Manual, Appendix P: Cooling Tower Monitoring, prepared by Texas Commission on Environmental Quality, January 31, 2003 (incorporated by reference—see §63.14) and the molecular weight of 16 grams per mole (g/mol) for methane.

(ii) Determine the mass flow rate of the cooling water at the monitoring location where the leak was detected. If the monitoring location is an individual cooling tower riser, determine the total cooling water mass flow rate to the cooling tower. Cooling water mass flow rates may be determined using direct measurement, pump curves, heat balance calculations, or other engineering methods. Volumetric flow measurements may be used and converted to mass flow rates using the density of water at the specific monitoring location temperature or using the default density of water at 25 degrees Celsius, which is 997 kilograms per cubic meter or 8.32 pounds per gallon.

(iii) For delay of repair monitoring intervals prior to repair of the leak, calculate the potential strippable hydrocarbon emissions for the leaking heat exchange system or heat exchanger for the monitoring interval by multiplying the leak concentration in the cooling water, ppmw, determined in (d)(4)(i) of this section, by the mass flow rate of the cooling water determined in (d)(4)(ii) of this section and by the duration of the delay of repair monitoring interval. The duration of the delay of repair monitoring interval is the time period starting at midnight on the day of the previous monitoring event or at midnight on the day the repair would have had to be completed if the repair had not been delayed, whichever is later, and ending at midnight of the day of the current monitoring event.

(iv) For delay of repair monitoring intervals ending with a repaired leak, calculate the potential strippable hydrocarbon emissions for the leaking heat exchange system or heat exchanger for the final delay of repair monitoring interval by multiplying the duration of the final delay of repair monitoring interval by the leak concentration and cooling water flow rates determined for the last monitoring event prior to the re-monitoring event used to verify the leak was repaired. The duration of the final delay of repair monitoring interval is the time period starting at midnight of the day of the last monitoring event prior to re-monitoring to verify the leak was repaired and ending at the time of the re-monitoring event that verified that the leak was repaired.

VII. ADDITIONAL REQUIREMENTS.

015 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

This source consists of a Cooling Tower for the Ultra Low Sulfur Gasoline (ULSG) process, manufactured by Cooling Tower Depot with a rated capacity of 10,200 gallons per minute. This cooling tower is equipped with drift eliminators.



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MONROE ENERGY LLC/TRAINER

**SECTION D. Source Level Plan Approval Requirements**

Source ID: 737

Source Name: NAPHTHA HDS HEATER

Source Capacity/Throughput

65,000 MMBTU/HR

I. RESTRICTIONS.**Emission Restriction(s).**

001 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

(a) VOC emissions from this source shall not exceed 1.76 tons per year, based on a 12-month rolling sum.

(b) PM-2.5 emissions from this source shall not exceed 2.43 tons per year, based on a 12-month rolling sum.

II. TESTING REQUIREMENTS.

No additional testing requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

III. MONITORING REQUIREMENTS.

No additional monitoring requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

IV. RECORDKEEPING REQUIREMENTS.

002 [25 Pa. Code §127.12b]

Plan approval terms and conditions.The permittee shall calculate and maintain records of VOC and PM-2.5 emissions for this source on a monthly and 12-month rolling sum basis. *how?***V. REPORTING REQUIREMENTS.**

No additional reporting requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

VI. WORK PRACTICE REQUIREMENTS.

No additional work practice requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

VII. ADDITIONAL REQUIREMENTS.

003 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The permittee shall continue to comply with all other applicable requirements in the current Title V Operating Permit for Source ID 737.



23-0003AB

MONROE ENERGY LLC/TRAINER

**SECTION D. Source Level Plan Approval Requirements**

Source ID: 742

Source Name: VCD 541 VAC HEATER

Source Capacity/Throughput

56,000 MMBTU/HR

I. RESTRICTIONS.**Emission Restriction(s).**

001 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

(a) NOx emissions from this source shall not exceed 20.50 tons per year, based on a 12-month rolling sum.

(b) VOC emissions from this source shall not exceed 0.77 tons per year, based on a 12-month rolling sum.

(c) PM-2.5 emissions from this source shall not exceed 1.06 tons per year, based on a 12-month rolling sum.

II. TESTING REQUIREMENTS.

No additional testing requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

III. MONITORING REQUIREMENTS.

No additional monitoring requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

IV. RECORDKEEPING REQUIREMENTS.

002 [25 Pa. Code §127.12b]

Plan approval terms and conditions.The permittee shall calculate and maintain records of NOx, VOC, and PM-2.5 emissions for this source on a monthly and 12-month rolling sum basis. *how?***V. REPORTING REQUIREMENTS.**

No additional reporting requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

VI. WORK PRACTICE REQUIREMENTS.

No additional work practice requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

VII. ADDITIONAL REQUIREMENTS.

003 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The permittee shall continue to comply with all other applicable requirements in the current Title V Operating Permit for Source ID 742.



SECTION E. Alternative Operation Requirements.

No Alternative Operations exist for this Plan Approval facility.



SECTION F. Emission Restriction Summary.

Source Id	Source Description			
747	REACTOR EFFLUENT HEATER H-124-01 (H01)			
Emission Limit				Pollutant
17.080	Tons/Yr	combined limit, 12-month rolling sum basis		CO
60.000	PPMV	daily on a 365 successive calendar day rolling avg.		Hydrogen Sulfide
162.000	PPMV	hourly on a 3-hr rolling avg.		Hydrogen Sulfide
0.035	Lbs/MMBTU			NOX
0.040	Lbs/MMBTU	HHV basis, daily on a 30-day rolling avg.		NOX
22.040	Tons/Yr	combined limit, 12-month rolling sum basis		NOX
3.150	Tons/Yr	combined limit, 12-month rolling sum basis		PM10
3.150	Tons/Yr	combined limit, 12-month rolling sum basis		PM2.5
1.000	Lbs/MMBTU			SO2
4.420	Tons/Yr	combined limit, 12-month rolling sum basis		SO2
3.150	Tons/Yr	combined limit, 12-month rolling sum basis		TSP
3.150	Tons/Yr	combined limit, 12-month rolling sum basis		VOC
748	STRIPPER REBOILER HEATER H-124-02 (H02)			
Emission Limit				Pollutant
17.080	Tons/Yr	combined limit, 12-month rolling sum basis		CO
60.000	PPMV	daily on a 365 successive calendar day rolling avg.		Hydrogen Sulfide
162.000	PPMV	hourly on a 3-hr rolling avg.		Hydrogen Sulfide
0.035	Lbs/MMBTU			NOX
0.040	Lbs/MMBTU	HHV basis, daily on a 30-day rolling avg.		NOX
22.040	Tons/Yr	combined limit, 12-month rolling sum basis		NOX
0.400	Lbs/MMBTU			PM10
3.150	Tons/Yr	combined limit, 12-month rolling sum basis		PM10
3.150	Tons/Yr	combined limit, 12-month rolling sum basis		PM2.5
1.000	Lbs/MMBTU			SO2
4.420	Tons/Yr	combined limit, 12-month rolling sum basis		SO2
3.150	Tons/Yr	combined limit, 12-month rolling sum basis		TSP
3.150	Tons/Yr	combined limit, 12-month rolling sum basis		VOC
702	ULSG COOLING TOWER			
Emission Limit				Pollutant
0.020	gr/DRY FT3			TSP
6.020	Tons/Yr	12-month rolling basis		VOC
737	NAPHTHA HDS HEATER			
Emission Limit				Pollutant
2.430	Tons/Yr	12-month rolling basis		PM2.5
1.760	Tons/Yr	12-month rolling basis		VOC
742	VCD 541 VAC HEATER			
Emission Limit				Pollutant
20.500	Tons/Yr	12-month rolling basis		NOX
1.060	Tons/Yr	12-month rolling basis		PM2.5

MEMO

TO James Rebarchak
Regional Manager
Air Quality

FROM Geoffrey Go
Engineering Specialist
New Source Review Section
Air Quality

THROUGH James A. Beach, P.E.
Environmental Engineer Manager
New Source Review Section
Air Quality

DATE February 18, 2016

RE Plan Approval Application Review – ULSG Project
Monroe Energy, LLC
Trainer Borough, Delaware County
Application No.: **23-0003AB**
APS ID: 882229, AUTH ID: 1092846

I. Overview

On September 16, 2015, DEP received a Plan Approval application from Monroe Energy, LLC (Monroe Energy) to install an Ultra Low Sulfur Gasoline (ULSG) Unit at its Trainer Refinery in Trainer Borough, Delaware County.

The Trainer Refinery is a major facility located in a PM2.5 nonattainment area and also in a severe nonattainment area for ozone.

The Trainer Refinery is a major facility for PSD pollutant emissions: NO_x, CO, SO_x, and PM₁₀.

The Trainer Refinery is a major facility for nonattainment new source review (NNSR) pollutant emissions: NO_x, VOC, and PM_{2.5}.

The Trainer Refinery is a major facility of HAP emissions.

Facility Information

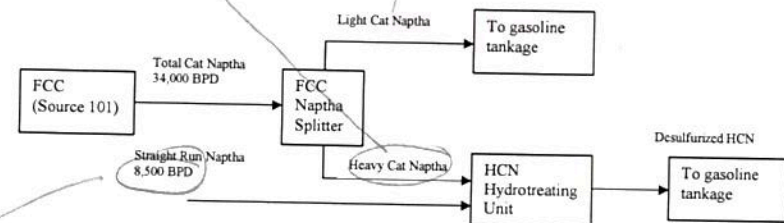
Monroe Energy owns and operates the refinery that processes mainly light, sweet (low-sulfur) crude oils and primarily produces jet fuel and other transportation fuels, such as gasoline, and diesel fuel. Other products include home heating oil, residual fuel oil, and liquefied petroleum gas (i.e. propane). The refinery also buys, sells, and trades intermediate streams that can be used as feed stocks or fuel blending components.

II. New Source Review

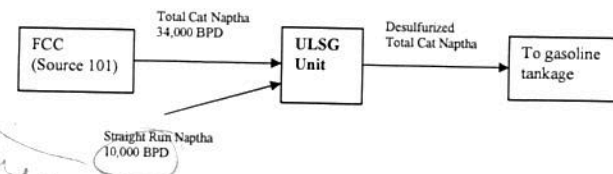
Project Scope

Monroe Energy proposes to purchase and relocate the low sulfur gasoline process unit from the former Sunoco, Marcus Hook Refinery and integrate it into the Trainer Refinery in order to meet the U.S. EPA Tier 3 Motor Vehicle Emission and Fuel Standards rule (Tier 3 standards). As their facility is currently configured, the Refinery cannot meet the Tier 3 standards.

Currently, total catalytic naphtha or total cat naphtha (TCN) is separated into light and heavy cat naphtha (LCN and HCN) from the FCC Unit. LCN is sent to tankage as a gasoline blending component, while HCN is hydrotreated to remove sulfur and then sent to tankage as a gasoline blending component. The HCN unit also currently processes straight run naphtha from the crude units. A block diagram of the existing configuration is shown below:



With the integration of the ULSG Unit, the FCC Naptha Splitter will be removed from service and TCN, including straight run naphtha from the crude units, will be sent to the ULSG unit for desulfurization. The ULSG unit is a hydrotreater consisting of two (2) parallel reactor trains, each with two (2) reactors. Desulfurized TCN will be sent to tankage for storage as a gasoline blending component. The proposed configuration is shown below:



Project Details

The new ULSG unit will be designed for a total naptha flow rate of 44,000 BPD, which is comprised of up to 34,000 BPD of total cat naptha from the FCC unit and up to 10,000 BPD of straight run naptha from the crude units. The 10,000 BPD of straight run naptha represents an increase of 1,500 BPD from the existing configuration.

This increase in naptha processing capability could result in a short-term average increase in the overall crude processing rate of up to 5,000 BPD. This processing rate increase could influence the short-term feed rates of several existing process units at the Refinery. Specifically, the process units affected include the D1 and D2 diesel hydrotreaters (Source IDs 736 and 741), the Isocracker 1st Stage Heater (Source ID 739), the Isocracker Splitter Reboiler (Source ID 740), and the sulfur recovery unit (SRU) (Source ID 102).

The proposed ULSG unit will require hydrogen to remove the sulfur in the feed. The Platformer unit (Source ID 119) produces the Refinery's hydrogen supply, but is limited by the availability of heavy naptha feed. To provide the necessary amount of hydrogen for the ULSG unit, a certain amount of light cycle oil (LCO) will be shifted away from the Isocracker to the D1 and D2 hydrotreaters. This LCO shift will decrease the olefin saturation and consume less hydrogen, thereby making hydrogen available for the ULSG unit. This shift will also result in a small increase in ULSD production.

The FCC unit will not see any increase in feed rate as a result of the ULSG project because the FCC unit operates to a coke burn limit. Under the proposed configuration, the FCC unit will consume more residual oil to minimize the production of number 6 oil. In order to process the residual oil while remaining at the FCC coke burn limit, some gasoil feed will be shifted to the Isocracker, resulting in a processing rate increase of gasoil at the Isocracker. The net Isocracker feed rate is expected to decrease because more LCO will be shifted away from the Isocracker than gasoil.

These feed shifts and resulting short-term processing rate changes do not represent new modes of operation, as feed shifts regularly occur.

The potential increase in the short-term crude processing rate and downstream process unit rates could result in process unit heater firing rate increases. Specifically, the process unit heaters which could see firing rate increases are the FCCU feed heater (Source ID 733), the VCD 541, 542 and 544 vacuum heaters (Source IDs 742, 743, and 746), the ACD 543 and 544 crude heaters (Source IDs 744 and 745), the Kerosene/HCN HTU feed heater (Source ID 735), the naptha HDS heater (Source ID 737), and the Platformer feed heaters (Source ID 738).

An increase in steam demand is also anticipated. The steam would be supplied by Boilers 9 and 10 (Source IDs 034 and 035). No physical modification of the boilers will be made as part of the proposed project and there will be no increase in the hourly maximum steam generating capacity of the boilers.

The proposed project could also result in increased short-term product throughput rates of the Refinery's storage tanks for crude, diesel fuel, jet fuel, and gasoline blending components.

Finally, the ULSG unit requires trim cooling on the reactor effluent stream and the product cooler. This cooling water demand will be provided by a proposed new cooling tower. Cooling tower water make-up will be provided by the local municipal water authority. New cooling tower blowdown will be directed to the Refinery's existing onsite Advanced Wastewater Treatment Plant (AWWTP).

Emissions Units involved in the project

A. New Emissions Units

The ULSG unit will utilize two (2) refinery fuel gas-fired process heaters rated at 99.6 and 44.2 MMBtu/hr, and one (1) new cooling tower with drift eliminators.

B. Modified Emissions Units

There are no proposed physical modifications to any existing air emission units at the Refinery as part of the proposed project. There are no proposed changes to the method of operation of any existing emission units.

C. Debottlenecked/Affected Emissions Units

Affected units are not modified, but as discussed earlier, may experience an emission rate change as a result of the project. The proposed project may allow a small increase in crude throughput and require some additional steam. The affected emissions units for this project are as follows:

- FCC Unit (Source ID 101)
- FCCU Feed Heater (Source ID 733)
- Kerosene/HCN HTU Feed Heater (Source ID 735)
- Diesel HTU Heater (Source ID 736)
- D2/VGO Hydrotreater Feed Heater (Source ID 741)
- Naptha HDS Heater (Source ID 737)
- Platformer Feed Heater (Source ID 738)
- Isocracker 1st Stage Heater (Source ID 739)
- Isocracker Splitter Reboiler (Source ID 740)
- VCD 541 VAC Heater (Source ID 742)
- VCD 542 VAC Heater (Source ID 743)
- VCD 544 VAC Heater (Source ID 746)
- ACD 543 Crude Heater (Source ID 744)
- ACD 544 Crude Heater (Source ID 745)
- Boiler 9 (Source ID 034)
- Boiler 10 (Source ID 035)
- Claus Sulfur Recovery Plant (Source ID 102)
- Main Flare (Source ID 103)
- Tank 93 (Source ID 165)

- Tank 94 (Source ID 166)
- Tank 95 (Source ID 126)
- Tank 96 (Source ID 127)
- Tank 152 (Source ID 137)
- Tank 153 (Source ID 138)
- Tank 155 (Source ID 140)
- Tank 157 (Source ID 142)
- Tank 158 (Source ID 300)
- Tank 159 (Source ID 143)
- Tank 160 (Source ID 194)
- Tank 161 (Source ID 144)
- Tank 162 (Source ID 145)
- Tank 163 (Source ID 146)
- Tank 164 (Source ID 147)
- Tank 165 (Source ID 148)
- Tank 166 (Source ID 149)
- Tank 168 (Source ID 150)
- Tank 170 (Source ID 152)
- Tank 174 (Source ID 155)
- Tank 178 (Source ID 157)
- Tank 181 (Source ID 160)
- Tank 182 (Source ID 161)
- Tank 185 (Source ID 163)
- Tank 186 (Source ID 164)

Emissions Inventory

The Trainer Refinery is located in an area that is classified as nonattainment with respect to the 2008 8-hour ozone and 2012 annual particulate matter (PM) less than 2.5 microns (PM_{2.5}) National Ambient Air Quality Standards (NAAQS). The area is either attainment, or unclassifiable, with respect to all other NAAQS. Since the Refinery already qualifies as a major stationary source under both of the major New Source Review (NSR) regulations, the project must be evaluated to determine if it qualifies as a major modification under the PADEP nonattainment NSR (NNSR) rules for ozone and PM_{2.5}, and the Federal Prevention of Significant Deterioration (PSD) rules for the other regulated NSR pollutants.

Monroe Energy conducted the NSR applicability assessment which included the analysis of baseline actual emissions (BAE) rates, projected actual emissions (PAE) rates, could have accommodated (CHA) emissions rates for the affected units, and the potential to emit (PTE) rates for new units.

A. Affected Units – Baseline Actual, Projected Actual, and Could Have Accommodated

Total emission increases from all existing affected units of the project are summarized in Table 1. These emissions account for the BAE, PAE, and excludable emissions (CHA - BAE).

Table 1.

Emission Unit		Affected Units – Emission Increases Summary (TPY)						
		PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	VOC	CO
Baseline Period		8/2013-7/2015	8/2013-7/2015	2/2013-1/2015	2/2013-1/2015	2/2013-1/2015	2/2013-1/2015	1/2013-12/2014
101	FCC Unit	0.00	0.00	0.00	0.00	0.00	0.00	0.00
733	FCCU Feed Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00
735	Kerosene/HCN Feed Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00
736	Diesel HTU Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00
741	D2/VGO Hydrotreater Feed Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00
737 ¹	Naptha HDS Heater	0.00	0.06	0.06	0.06	0.00	0.04	0.63
738	Platformer Feed Heater	0.00	0.78	0.00	0.00	0.00	0.00	0.00
739	Isocracker 1 st Stage Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00
740	Isocracker Splitter Reboiler	0.00	0.00	0.00	0.00	0.00	0.00	0.00
742	VCD 541 VAC Heater	0.00	0.00	0.04	0.04	1.23	0.03	0.41
743	VCD 542 VAC Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00
746	VCD 544 VAC Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00
744	ACD 543 Crude Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00
745	ACD 544 Crude Heater	0.00	0.00	0.00	0.00	0.00	0.00	0.00
34	Boiler 9	0.00	0.07	0.00	0.00	0.00	0.00	0.00
35	Boiler 10	0.00	0.00	0.00	0.91	0.00	0.00	0.00
102	SRU	0.00	0.00	0.00	12.36	0.00	0.00	0.00
103	Main Flare	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165	Tank 93	-	-	-	-	-	0.00	-
166	Tank 94	-	-	-	-	-	0.00	-
126	Tank 95	-	-	-	-	-	0.00	-
127	Tank 96	-	-	-	-	-	0.00	-
137	Tank 152	-	-	-	-	-	0.00	-
138	Tank 153	-	-	-	-	-	0.00	-
140	Tank 155	-	-	-	-	-	0.00	-

¹ It should be noted that for Source ID 737 calculations, the facility projected that the Naptha HDS Heater to operate up to 76.0 MMBtu/hr. The source is currently listed in the Title V Operating Permit with a capacity of 65.0 MMBtu/hr. This plan approval will update this source's heat input rating. This revision does not affect any existing applicable requirements for this source.

142	Tank 157	-	-	-	-	-	0.00	-
300	Tank 158	-	-	-	-	-	0.00	-
143	Tank 159	-	-	-	-	-	0.00	-
194	Tank 160	-	-	-	-	-	0.00	-
144	Tank 161	-	-	-	-	-	0.00	-
145	Tank 162	-	-	-	-	-	0.00	-
146	Tank 163	-	-	-	-	-	0.00	-
147	Tank 164	-	-	-	-	-	0.00	-
148	Tank 165	-	-	-	-	-	0.00	-
149	Tank 166	-	-	-	-	-	0.00	-
150	Tank 168	-	-	-	-	-	0.00	-
152	Tank 170	-	-	-	-	-	0.00	-
155	Tank 174	-	-	-	-	-	0.00	-
156	Tank 175	-	-	-	-	-	0.00	-
157	Tank 178	-	-	-	-	-	0.00	-
160	Tank 181	-	-	-	-	-	0.00	-
161	Tank 182	-	-	-	-	-	0.00	-
163	Tank 185	-	-	-	-	-	0.00	-
164	Tank 186	-	-	-	-	-	0.00	-
Totals		0.00	0.90	0.09	13.37	1.24	0.07	1.04

The data in Table 1 was calculated as follows: First, baseline actual emissions, projected actual emissions, and could have accommodated emissions were determined for each affected unit. Then, excludable emissions were determined by subtracting the BAE from the CHA emissions (CHA-BAE). Finally, the total project emissions increases were calculated using the formula (PAE-Excludable-BAE).

Detailed calculations and Tables (including other pollutants such as lead, H2S, TRS, and GHGs) can be found in the application file. Revised/corrected emission calculation tables (C-1, C-2, C-31, C-32, C-33, C-34, C-35, and C-36) were received from the permittee on January 13, 2016.

B. New Units – Potential to Emit (PTE)

New unit emissions are summarized in Table 2. These numbers represent the new units' potential to emit (PTE). Detailed calculations and Tables can be found in the application file.

Table 2.

Emission Unit		New Units – Potential to Emit (TPY)						
		PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	VOC	CO
747 & 748	New Feed Heaters	3.15	3.15	3.15	4.42	22.04	3.15	17.08
702	New Cooling Tower	0.16	0.16	0.16	-	-	6.02	-
215	Additional Fugitive Emissions	-	-	-	-	-	5.13	-
Totals		3.31	3.31	3.31	4.42	22.04	14.30	17.08

C. PSD Applicability Determination

Pennsylvania has adopted the Federal PSD regulations cited under 40 C.F.R. § 52.21 in their entirety in Subchapter D of Chapter 127 of the state air regulations.

Step 1 – Emissions increases from the new and modified/affected emission units are summed and compared to the PSD significant emission increase thresholds for each regulated NSR pollutant.

Table 3.

	Total Project Emissions Increases (TPY)						
	PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	VOC	CO
Affected Units	0.00	0.90	0.09	13.37	1.24	8.08	1.04
New Units	3.31	3.31	3.31	4.42	22.04	14.30	17.08
Total Project Emissions Increases	3.31	4.21	3.40	17.79	23.28	14.37	18.12
PSD Significance Threshold	25	15	10	40	40	40	100
PSD Significant?	No	No	No	No	No	No	No

The data presented in Table 3 shows that the emission increases for each regulated NSR pollutant emitted for the project are below the PSD significance levels for Step 1. As a result, no further assessment is required and the proposed project is not subject to PSD permitting requirements.

Greenhouse Gas (GHG)

The Greenhouse Tailoring Rule, issued May 13, 2010, allowed regulation of greenhouse gases in permits issued on or after July 1, 2011 from facilities defined as major under the rule through the Prevention of Significant Deterioration (PSD) program, in accordance with 40 CFR Section 52.21(b)(49)(v)(b). On June 23, 2014, in *Utility Air Regulatory Group vs. EPA*, the Supreme Court ruled that the Clean Air Act neither compels nor permits the EPA to require a facility to obtain a PSD permit on the sole basis of its greenhouse gas emissions. Through this ruling, the Greenhouse Tailoring Rule will only regulate facilities for greenhouse gases that are major for PSD pollutants and undergo modifications that are also major under the PSD program. As shown in Table 3, the project is not major for any of the conventional PSD pollutants. Greenhouse gas emissions from the project are therefore not subject to PSD regulations. GHG emissions data are presented in Table 4 below:

Table 4.

Emissions Unit		GHG Emissions (TPY)			
		CO ₂	N ₂ O	CH ₄	CO _{2e}
Baseline Period		6/2009-5/2011	6/2009-5/2011	6/2009-5/2011	6/2009-5/2011
101	FCC Unit	499,375.51	2.93	14.67	500,614.22
733	FCCU Feed Heater	16,695.75	0.17	0.85	16,767.57

735	Kerosene/HCN Feed Heater	4,319.92	0.04	0.22	4,338.50
736	Diesel HTU Heater	13,802.45	0.14	0.70	13,861.83
741	D2/VGO Hydrotreater Feed Heater	23,209.06	0.24	1.18	23,308.90
737	Naptha HDS Heater	33,037.72	0.34	1.68	33,179.83
738	Platformer Feed Heater	284,157.46	2.89	14.45	285,379.82
739	Isocracker 1 st Stage Heater	14,711.55	0.15	0.75	14,774.84
740	Isocracker Splitter Reboiler	18,382.52	0.19	0.93	18,461.59
742	VCD 541 VAC Heater	13,793.59	0.14	0.70	13,852.93
743	VCD 542 VAC Heater	17,771.31	0.18	0.90	17,847.75
746	VCD 544 VAC Heater	35,464.65	0.36	1.80	35,617.21
744	ACD 543 Crude Heater	143,860.54	1.46	7.31	144,479.38
745	ACD 544 Crude Heater	145,398.35	1.48	7.39	146,023.81
34	Boiler 9	72,880.82	0.14	1.37	72,956.09
35	Boiler 10	83,481.92	0.16	1.57	83,568.14
102	SRU	2,852.70	0.06	5.88E-03	2,870.38
103	Main Flare	51,382.53	0.96	8.75	51,887.23
165	Tank 93	-	-	-	-
166	Tank 94	-	-	-	-
126	Tank 95	-	-	-	-
127	Tank 96	-	-	-	-
137	Tank 152	-	-	-	-
138	Tank 153	-	-	-	-
140	Tank 155	-	-	-	-
142	Tank 157	-	-	-	-
300	Tank 158	-	-	-	-
143	Tank 159	-	-	-	-
194	Tank 160	-	-	-	-
144	Tank 161	-	-	-	-
145	Tank 162	-	-	-	-
146	Tank 163	-	-	-	-
147	Tank 164	-	-	-	-
148	Tank 165	-	-	-	-
149	Tank 166	-	-	-	-
150	Tank 168	-	-	-	-
152	Tank 170	-	-	-	-
155	Tank 174	-	-	-	-
156	Tank 175	-	-	-	-
157	Tank 178	-	-	-	-
160	Tank 181	-	-	-	-
161	Tank 182	-	-	-	-
163	Tank 185	-	-	-	-

164	Tank 186	-	-	-	-
Totals		1,474,578	11.98	64.81	1,479,767.25

D. NNSR Applicability Determination

U.S. EPA has approved PADEP's NNSR regulations through their incorporation into Pennsylvania's State Implementation Plan (SIP). These state-specific NNSR regulations are codified in Title 25 – Environmental Protection of the Pa. Code Chapter 127, Subchapter E.

Delaware County is currently classified as nonattainment with respect to the 2012 annual PM_{2.5} NAAQS, and is managed as a severe nonattainment area with respect to the ozone eight (8)-hour NAAQS for permitting applicability purposes. Similar to the Federal PSD rules, under PADEP's NNSR rules a project must have both a significant emissions increase and a significant net emissions increase of the nonattainment pollutant or precursor pollutants to be a major modification.

Step 1 – In accordance with 25 Pa. Code § 127.203a, the results of the PADEP NNSR permitting applicability evaluation for ozone and PM_{2.5} are presented in Table 5.

Table 5.

Emission Unit		Project Related Emissions Increase (TPY) (PAE – Excludable – BAE)				
		PM _{2.5} NNSR			Ozone NNSR	
		PM _{2.5}	SO ₂	NO _x	NO _x	VOC
Baseline Period		2/2013-1/2015	2/2013-1/2015	2/2013-1/2015	2/2013-1/2015	2/2013-1/2015
101	FCC Unit	0.00	0.00	0.00	0.00	0.00
733	FCCU Feed Heater	0.00	0.00	0.00	0.00	0.00
735	Kerosene/HCN Feed Heater	0.00	0.00	0.00	0.00	0.00
736	Diesel HTU Heater	0.00	0.00	0.00	0.00	0.01
741	D2/VGO Hydrotreater Feed Heater	0.00	0.00	0.00	0.00	0.00
737	Naptha HDS Heater	0.06	0.06	0.00	0.00	0.04
738	Platformer Feed Heater	0.00	0.00	0.00	0.00	0.00
739	Isocracker 1 st Stage Heater	0.00	0.00	0.00	0.00	0.00
740	Isocracker Splitter Reboiler	0.00	0.00	0.00	0.00	0.00
742	VCD 541 VAC Heater	0.04	0.04	1.23	1.23	0.03
743	VCD 542	0.00	0.00	0.00	0.00	0.00

	VAC Heater					
746	VCD 544 VAC Heater	0.00	0.00	0.00	0.00	0.00
744	ACD 543 Crude Heater	0.00	0.00	0.00	0.00	0.00
745	ACD 544 Crude Heater	0.00	0.00	0.00	0.00	0.00
34	Boiler 9	0.00	0.00	0.00	0.00	0.00
35	Boiler 10	0.00	0.91	0.00	0.00	0.00
102	SRU	0.00	12.36	0.00	0.00	0.00
103	Main Flare	0.00	0.00	0.00	0.00	0.00
165	Tank 93	-	-	-	-	0.00
166	Tank 94	-	-	-	-	0.00
126	Tank 95	-	-	-	-	0.00
127	Tank 96	-	-	-	-	0.00
137	Tank 152	-	-	-	-	0.00
138	Tank 153	-	-	-	-	0.00
140	Tank 155	-	-	-	-	0.00
142	Tank 157	-	-	-	-	0.00
300	Tank 158	-	-	-	-	0.00
143	Tank 159	-	-	-	-	0.00
194	Tank 160	-	-	-	-	0.00
144	Tank 161	-	-	-	-	0.00
145	Tank 162	-	-	-	-	0.00
146	Tank 163	-	-	-	-	0.00
147	Tank 164	-	-	-	-	0.00
148	Tank 165	-	-	-	-	0.00
149	Tank 166	-	-	-	-	0.00
150	Tank 168	-	-	-	-	0.00
152	Tank 170	-	-	-	-	0.00
155	Tank 174	-	-	-	-	0.00
156	Tank 175	-	-	-	-	0.00
157	Tank 178	-	-	-	-	0.00
160	Tank 181	-	-	-	-	0.00
161	Tank 182	-	-	-	-	0.00
163	Tank 185	-	-	-	-	0.00
164	Tank 186	-	-	-	-	0.00
747 & 748	New Feed Heaters	3.15	4.42	22.04	22.04	3.15
702	New Cooling Tower	0.16	-	-	-	6.02
215	Additional Fugitive Emissions	-	-	-	-	5.13
Total Project Emissions Increases		3.40	17.79	23.28	23.28	14.37
NNSR Significance Threshold		10	40	40	25	25
NNSR Significant?		No	No	No	No	No

The data in Table 5 above shows that the project related emissions increases are below the NNSR significance levels for non-attainment pollutants and precursors. This project is not subject to Lowest Achievable Emission Rate (LAER) requirements.

Step 2 – In accordance with 25 Pa. Code § 127.203a(a)(2), the permittee must evaluate the proposed NOx and VOC emissions increases from the project (PM_{2.5} and PM_{2.5} precursors are excluded), and aggregate the project-related emissions increases with other increases and decreases of NOx and VOC which occurred within 10 years prior to the date of submission of a complete application. If the 10-year net aggregated emissions increase exceeds the emissions rate that is significant, only emissions offsets, in accordance with 25 Pa. Code § 127.205(3), are required to offset the aggregated emissions increases. The following table presents the aggregated emissions increases and decreases for NOx and VOC within the past 10 years.

Table 6.

Date	Plan Approval/RFD	Description	Emission Increase/Decrease	
			NOx	VOC
10/03/2006	23-0003I	Two New Boilers	23.70	2.60
05/04/2007	23-0003J	Clean Fuel Project	39.00	0.00
10/19/2007	23-0003K	Modification to PA 23-0003G	21.89	0.00
10/23/2008	23-0003M	Cooling Tower	0.00	0.74
12/08/2008	23-0003N	FCCU Feed Heater Modification	0.00	-1.10
02/09/2009	23-0003O	ReVAP, withdrawn	--	--
04/10/2009	23-0003P	2010 Turnaround	1.59	0.26
09/28/2009	23-0003Q	Boiler MACT Phase II Application	0.00	0.00
12/04/2009	RFD	Light Components Loading	0.07	0.14
12/23/2009	23-0003R	Aromatic Saturation Unit Project, withdrawn	--	--
10/01/2010	23-0003S	Flare Gas Recovery Project	0.00	3.58
10/01/2010	23-0003T	Amended Alky ReVAP Project, withdrawn	--	--
11/09/2011	23-0003U	Two New Boilers (Replace Boiler 8), withdrawn	--	--
04/12/2012	23-0003V	Diesel Heater Project, withdrawn	--	--
08/09/2012	RFD	Main Flare – Turnaround	0.00	0.09
01/10/2013	RFD #3418	Propane Loading into Trucks	0.00	0.00
04/04/2013	RFD #3561	Peabody Heater Modifications	0.00	0.00
04/23/2013	RFD #3596	Max Jet	0.00	0.21
05/17/2013	23-0003W	D2 Project ²	0.00	3.44
03/13/2014	23-0003X	400 kW Emergency Generator ³	1.19	0.01
10/14/2014	23-0003Y	Proposed Boiler 13 (Replace Boiler 8)	11.70	1.98
Total Contemporaneous Emission Increases w/ Proposed Boiler 13			117.14	0.00
Total Contemporaneous Emission Reduction Credits Required			152.28 ⁴	0.00
Total Emission Reduction Credits Previously Provided with PA 23-0003X			-146.20 ⁵	N/A
Total Emission Reduction Credits Previously Required/Provided with PA 23-0003Y			6.08 ⁶	0.00

² Project triggered NNSR for VOC, 40 tons of VOC ERCs were purchased, cumulative contemporaneous emissions increase reset back to zero.

³ Project triggered NNSR for NOx, 147.6 tons of NOx ERCs were purchased, cumulative contemporaneous emissions increase reset back to zero with an additional 1.4 tons available for future use.

⁴ At an offset ratio of 1.3:1 per 25 Pa. Code § 127.210.

⁵ The permittee provided 146.20 tons of NOx ERCs through Plan Approval 23-0003X.

⁶ Project triggered NNSR for NOx, 6.08 tons of NOx ERCs were purchased, cumulative contemporaneous emission increase reset back to zero.

TBD	23-0003Z	Proposed Cooling Tower Project	1.44	67.38 ⁷
TBD	TBD	Proposed Flare PAA	1.60	0.09
TBD	TBD	Proposed ULSG PAA	23.28	14.37
5-year Aggregation			26.32	14.45
10-year Aggregation			26.32	14.45
Significance Level			25	25
Total Emission Reduction Credits Required			34	N/A

As Table 6 above shows, the 10-year net emissions increase including the ULSG project is 26.32 tons for NOx, which exceeds the significance threshold of 25 tons and will require an offset of 34.0 tons of NOx emission reduction credits (ERCs). The offset ratio is 1.3 to 1 for NOx, in accordance with 25 Pa. Code § 127.210, and is rounded to a whole number.

Once this plan approval is issued, the permittee shall comply with the requirements of 25 Pa. Code § 127.208 regarding the use and transfer of ERCs. This requirements have been placed in Section C of the Plan Approval.

E. Projected Actual Emissions (PAE) Limits

In accordance with PADEP NNSR rules, under 25 Pa. Code § 127.203a(5), the projected actual emissions must be incorporated as a permit limit when the projected actual emissions minus the excludable emissions (emissions following completion of the project that the existing unit could have accounted for prior to the change and that are also unrelated to the change) exceed the baseline actual emissions.

Table 6 below presents a comparison of the existing affected unit's PAE to their respective BAE, for NOx, VOC, and PM_{2.5} pollutants. In instances where the PAE > BAE, the PAE has been established as a new emission limit in the plan approval.

Table 7.

Source	NNSR Pollutant	PAE	CHA	Excludable (CHA-BAE)	If: Adjusted PAE > BAE Then: New limit is required			Requires new limit?
					Adjusted PAE (PAE-Excludable)	BAE	Title V Limit	
101	NOx	432.52	454.41	220.95	211.57	233.46	654.50	No
	VOC	3.20	3.26	0.11	3.09	3.15	8.10	No
	PM _{2.5}	96.21	112.69	70.90	25.31	41.79	93.30	No
733	NOx	3.02	6.67	4.11	-1.09	2.56	12.48	No
	VOC	0.52	1.10	0.68	-0.16	0.42	2.20	No
	PM _{2.5}	0.72	1.52	0.94	-0.22	0.58	3.00	No
735	NOx	4.51	8.84	3.48	1.03	5.36	14.32	No
	VOC	0.18	0.35	0.15	0.03	0.20	NA	No
	PM _{2.5}	0.25	0.48	0.18	0.07	0.30	NA	No
736	NOx	13.84	22.76	11.02	2.82	11.74	24.36	No

⁷ Project triggered NNSR for VOC, 69.39 tons of VOC ERCs were purchased, cumulative contemporaneous emission increase reset back to zero.

	VOC	0.39	0.67	0.47	-0.08	0.20	3.40	No
	PM _{2.5}	0.62	0.93	0.45	0.17	0.48	1.50	No
741	NOx	7.71	18.34	9.30	-1.59	9.04	NA	No
	VOC	0.42	1.01	0.51	-0.09	0.50	NA	No
	PM _{2.5}	0.59	0.75	0.55	0.04	0.20	NA	No
737	NOx	33.29	37.04	11.09	22.20	25.95	NA	No
	VOC	1.76	1.72	0.33	1.43	1.39	NA	Yes
	PM _{2.5}	2.43	2.37	0.45	1.98	1.92	NA	Yes
738	NOx	185.70	191.96	43.71	141.99	148.25	317.00	No
	VOC	11.75	12.14	2.08	9.67	10.06	NA	No
	PM _{2.5}	16.23	16.78	2.88	13.35	13.90	NA	No
739	NOx	16.77	23.20	7.24	9.53	15.96	30.66	No
	VOC	0.75	1.08	0.35	0.40	0.73	NA	No
	PM _{2.5}	1.03	1.49	0.48	0.55	1.01	NA	No
740	NOx	18.05	20.92	4.98	13.07	15.94	NA	No
	VOC	0.99	1.15	0.27	0.72	0.88	NA	No
	PM _{2.5}	1.37	1.59	0.38	0.99	1.21	NA	No
742	NOx	20.50	19.27	6.52	13.98	12.75	NA	Yes
	VOC	0.77	0.74	0.24	0.53	0.50	NA	Yes
	PM _{2.5}	1.06	1.03	0.33	0.73	0.70	NA	Yes
743	NOx	6.75	7.52	3.50	3.25	4.02	31.30	No
	VOC	0.03	0.03	0.01	0.02	0.02	0.79	No
	PM _{2.5}	0.62	1.32	0.62	0.00	0.70	3.10	No
746	NOx	12.44	15.71	3.22	9.22	12.49	42.05	No
	VOC	2.18	2.56	0.45	1.73	2.11	5.50	No
	PM _{2.5}	2.19	3.36	0.59	1.60	2.77	9.10	No
744	NOx	45.55	49.71	10.21	35.34	39.50	NA	No
	VOC	5.81	6.34	1.01	4.80	5.33	NA	No
	PM _{2.5}	8.02	8.76	1.40	6.62	7.36	NA	No
745	NOx	50.11	56.20	11.26	38.85	44.94	NA	No
	VOC	5.80	6.68	1.18	4.62	5.50	NA	No
	PM _{2.5}	8.01	9.23	1.63	6.38	7.60	NA	No
034	NOx	4.41	4.94	0.78	3.63	4.16	11.80	No
	VOC	0.31	0.35	0.31	0.00	0.04	2.00	No
	PM _{2.5}	5.07	5.29	4.74	0.33	0.55	13.70	No
035	NOx	3.93	5.09	1.19	2.74	3.90	11.80	No
	VOC	0.27	0.31	0.28	-0.01	0.03	2.00	No
	PM _{2.5}	2.97	3.07	2.61	0.36	0.46	13.70	No
102	NOx	5.83	6.81	2.48	3.35	4.33	NA	No
	VOC	0.32	0.37	0.14	0.18	0.23	NA	No
	PM _{2.5}	0.44	0.51	0.19	0.25	0.32	NA	No
103	NOx	3.15	18.23	8.24	-5.09	9.99	NA	No
	VOC	6.48	37.52	16.96	-10.48	20.56	NA	No
	PM _{2.5}	1.74	9.33	4.29	-2.55	5.04	NA	No
165	VOC	1.92	2.03	-2.56	4.48	4.59	6.50	No
166	VOC	2.76	2.91	0.95	1.81	1.96	6.50	No
126	VOC	3.46	3.56	1.12	2.34	2.44	NA	No
127	VOC	4.45	4.61	1.24	3.21	3.37	NA	No
137	VOC	4.06	8.64	6.30	-1.24	2.34	NA	No
138	VOC	0.19	0.20	0.04	0.15	0.16	0.70	No
140	VOC	0.18	0.18	0.05	0.13	0.13	NA	No
142	VOC	0.21	0.24	0.09	0.12	0.15	NA	No
300	VOC	13.15	17.18	16.12	-2.97	1.06	NA	No
143	VOC	3.97	4.06	-0.02	3.99	4.08	NA	No

194	VOC	0.22	0.26	-4.43	4.65	4.69	0.30	No
144	VOC	6.04	6.21	3.53	2.51	2.68	NA	No
145	VOC	3.25	6.36	5.72	-2.47	0.64	NA	No
146	VOC	4.25	4.41	2.59	1.66	1.82	NA	No
147	VOC	3.79	7.79	5.91	-2.12	1.88	NA	No
148	VOC	8.26	20.33	18.10	-9.84	2.23	NA	No
149	VOC	3.55	4.06	1.17	2.38	2.89	NA	No
150	VOC	2.89	3.42	1.73	1.16	1.69	NA	No
152	VOC	6.13	6.24	2.03	4.10	4.21	NA	No
155	VOC	12.01	13.79	9.80	2.21	3.99	NA	No
156	VOC	7.43	7.94	1.58	5.85	6.36	NA	No
157	VOC	3.23	5.85	2.32	0.91	3.53	NA	No
160	VOC	8.75	22.24	20.00	-11.25	2.24	NA	No
161	VOC	20.53	39.43	35.05	-14.52	4.38	NA	No
163	VOC	11.26	11.81	2.99	8.27	8.82	NA	No
164	VOC	5.47	6.60	1.06	4.41	5.54	NA	No

As the table above indicates, Source ID 737 will require a new VOC and PM_{2.5} limit, and Source ID 742 will require a new NO_x, VOC, and PM_{2.5} limit.

III. Regulatory Analysis

A. 40 C.F.R. Part 60 - New Source Performance Standards (NSPS)

40 C.F.R. Part 60, Subpart Ja – Standards of Performance for Petroleum Refineries for which Construction, Reconstruction, or Modification commenced after May 14, 2007. The two new feed heaters (Source IDs 747 and 748) are subject to this NSPS as follows:

§ 60.102a(g) - The owner or operator shall not burn in any fuel gas combustion device any fuel gas that contains H₂S in excess of 162 ppmv determined hourly on a 3-hour rolling average basis and H₂S in excess of 60 ppmv determined daily on a 365 successive calendar day rolling average basis. Compliance with this limit assures compliance with 25 Pa. Code § 123.22(e)(1).

For each natural draft process heater with a rated capacity of greater than 40 million British thermal units per hour (MMBtu/hr) on a higher heating value basis, the owner or operator shall not discharge to the atmosphere any emissions of NO_x in excess of 0.040 pounds per million British thermal units (lb/MMBtu) higher heating value basis determined daily on a 30-day rolling average basis.

§ 60.103a(c)(2), (d)(1) & (5), and (e)(1)-(3) – The permittee shall comply with root cause and corrective action analysis requirements specified in this section for each exceedance of an applicable short-term emissions limit.

§ 60.104a(a), (c), and (i) – NO_x testing to demonstrate compliance with the NO_x emission limit shall be conducted in accordance with the methods specified in this section.

§ 107a(a)(2) – The permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H₂S in the fuel gases before being burned in any fuel gas combustion device.

§ 107a(d) – The permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration (dry basis, 0-percent excess air) of NO_x emissions into the atmosphere.

§ 107a(i) – The permittee shall comply with the requirements for excess emissions reporting that is specified in this section.

§ 108a(a), (b), (c)(6), (d) – The permittee shall comply with the applicable recordkeeping and reporting requirements specified in this section.

40 C.F.R. Part 60, Subpart GGGa – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006. The valves, flanges, pumps, and associated equipment for the proposed ULSG unit (i.e., Source ID 215, New Fugitive Components) are subject to these requirements. All existing applicable requirements of Subpart GGGa are specified in Monroe Energy's TVOP (23-00003). These new fugitive components will be required to comply with these requirements. Compliance with these requirements assure compliance with 25 Pa. Code § 129.58.

40 C.F.R. Part 60, Subpart QQQ – Standards of Performance for VOC emissions from Petroleum Wastewater Systems. The blowdown from the proposed new cooling tower will be introduced into the existing onsite wastewater system and directed to the existing onsite Advanced Wastewater Treatment Plant (AWWTP). The cooling tower blowdown is not oily wastewater from a refiner process unit and thus installation of the cooling tower and associated blowdown drain piping will not be subject to Subpart QQQ. The proposed ULSG unit will not be subject to Subpart QQQ since the proposed unit will not include new drain systems to the AWWTP.

B. 40 C.F.R. Parts 61 and 63 – National Emission Standards for Hazardous Air Pollutants

40 C.F.R. Part 61, Subpart FF – National Emission Standard for Benzene Waste Operations. The rule applies to petroleum refineries with benzene-containing hazardous waste. The proposed new cooling tower will direct blowdown to the existing AWWTP at the Refinery. Monroe currently samples and analyzes the influent to the AWWTP for benzene and other HAPs as part of the refinery's existing BWON program, and will

continue to do so for the ULSG project. Source 133 has been incorporated into this Plan Approval to link the applicable requirements of Subpart FF.

40 C.F.R. Part 63, Subpart Q – National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers. This rule affects all new industrial process cooling towers that are operated with the use of chromium-based water treatment chemicals and that are integral parts of a facility that is a major source. Since the Trainer refinery has no plans to use chromium-based chemicals in the new cooling tower, this subpart does not apply. A condition has been placed under the ULSG Cooling Tower (Source ID 702), which specifically prohibits the use of chromium based water treatment chemicals.

40 C.F.R. Part 63, Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries. This rule applies to all heat exchange systems in organic HAP service at petroleum refineries. The cooling tower for the ULSG project will be specifically subject to the requirements under 40 C.F.R. § 63.654 for heat exchange systems and the applicable reporting and recordkeeping requirements under § 63.655.

§ 63.654(c) - The permittee shall comply with the monitoring plan requirements for closed-loop recirculation heat exchange systems, which include monitoring locations, monitoring methods, and monitoring frequency and leak action levels.

§ 63.654(d)-(g) - The permittee shall comply with the work practice requirements for leak repair and monitoring as specified under these sections.

§ 63.655(e) - The permittee shall submit a Notification of Compliance Status report as described in § 63.655(f)(1)(vi), periodic reports as described in § 63.655(g)(9), and other reports as described in § 63.655(h)(7).

§ 63.655(i)(4) - The permittee shall comply with the recordkeeping requirements for heat exchange systems that are specified in this section.

Subpart CC also contains equipment leak standards for the equipment in HAP service. Under § 63.648(a)(1), compliance with 40 CFR Part 60, Subpart VV apply only to equipment in organic HAP service, as defined in § 63.641 of Subpart CC. However, as previously stated, the fugitive components associated with the proposed ULSG unit will be subject to fugitive emission monitoring pursuant to 40 CFR Part 60, Subpart GGGa. Because the monitoring requirements are more stringent than the monitoring requirements of Subpart VV, the refinery's compliance with Subpart GGGa will ensure compliance with Subpart VV, and thus ensure compliance with Subpart CC.

Subpart CC also includes standards for storage vessels and wastewater streams, at § 63.646 and § 63.647, respectively. Monroe has previously established monitoring, recordkeeping, and reporting systems for existing affected sources in accordance with the provisions of § 63.653 and § 63.644. Monroe will integrate newly affected sources and processes into the existing monitoring, recordkeeping, and reporting systems, as applicable.

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revised 12/15 signed 9/29/15

40 C.F.R. Part 63, Subpart UUU – National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units. Although the proposed ULSG unit will not be subject to Subpart UUU, the proposed project will result in a nominal increase of crude throughput at the refinery of 5,000 barrels per day which will in turn affect the refinery's units that are subject to Subpart UUU (i.e., the Platformer, FCC Unit, and SRU). However, the increase in crude throughput will not require the reconstruction of any Subpart UUU affected sources at the Refinery. Therefore, no new requirements of Subpart UUU are triggered as a result of the ULSG project. The refinery shall continue to comply with all applicable provisions of Subpart UUU following the proposed project. Need to increase capacity at some pt.

40 C.F.R. Part 63, Subpart DDDDD (Boiler MACT) – National Emission Standards for Industrial Commercial, and Institutional Boilers and Process Heaters. For purposes of implementation of the Boiler MACT to the proposed H-01 and H-02 process heaters associated with the proposed ULSG process, the two heaters qualify as existing units. The purchase and transfer of these existing process heaters from the Sunoco Marcus Hook Refinery to the Trainer Refinery does not constitute a new installation or reconstruction since these units qualified as existing at their previous location.

The Boiler MACT defines a process heater as new if construction or reconstruction of the unit commenced after June 4, 2010. Since the heaters were constructed approximately 10 years ago, construction of the units took place before June 4, 2010, meaning they are existing. The definition under the NESHAP General Provisions under § 63.2 goes on to further define that: "Construction does not include the removal of all equipment comprising an affected source from an existing location and reinstallation of such equipment at a new location."

Thus, if the process heaters qualified as existing when they were at the Sunoco Marcus Hook Refinery, and have not been reconstructed since June 4, 2010, they will remain existing units for purposes of implementing the Boiler MACT requirements.

The two process heaters will combust only refinery gas, which meets the Boiler MACT definition of a gas 1 fuel. Pursuant to § 63.7500(e), units designed to combust gas 1 fuels are not subject to the emissions limits in Subpart DDDDD. Boilers and process heaters that combust only gas 1 fuels are subject only to the work practice standards codified in Subpart DDDDD. This includes the annual tune-up requirements specified in § 63.7540(a)(10) and a one-time energy assessment specified in § 63.7510(j).

C. Commonwealth of Pennsylvania Regulations

(i) **Chapter 123 – Standards for Contaminants**

25 Pa. Code § 123.11 – The two process heaters are subject to the particulate matter emissions standards for combustion units specified in this regulation. Process Heater H-

02 which is rated at 44.2 MMBtu/hr is subject to § 123.11(a)(1) with an allowable filterable PM emission limit of 0.40 lb/MMBtu. The other Process Heater H-01 is rated at 99.6 MMBtu/hr and is subject to § 123.11(a)(2) with an allowable filterable PM limit according to the following formula:

$$A = 3.6E^{-0.56}$$

Where:

A = Allowable emissions in pounds per million British thermal units (MMBtu) of heat input, and

E = Heat input to the combustion unit in MMBtu/hr.

The allowable filterable PM emission limit for Process Heater H-01 is 0.27 lb/MMBtu when operating at its maximum rated capacity. Compliance with the filterable PM emission limits for both process heaters will be assured by firing only refinery fuel gas and by operating the two heaters in accordance with the applicable Boiler MACT work practice standards.

25 Pa. Code § 123.22 – This regulation specifies the sulfur compound emission standards for combustion units. This sulfur dioxide emission standard that is applicable to the two process heaters under 25 Pa. Code § 123.22(e)(1) for combustion units located in the inner zone of the Southeast Pennsylvania Air Basin is 1.0 lb/MMBtu. Compliance with this requirement will be assured through compliance with 40 C.F.R. Part 60, Subpart Ja.

25 Pa. Code § 123.13 – Particulate matter emission standards for Processes. The cooling tower is classified as a process emissions unit under the Pennsylvania air quality regulations. Under § 123.13(c)(1)(iii), a process emission unit with an effluent gas volume greater than 300,000 actual cubic feet per minute (acfm), may not emit filterable PM in excess of 0.02 grains per dry standard cubic foot (gr/dscf). The cooling tower associated with the ULSG project will have an approximate effluent gas volume greater than 300,000 acfm. Installation, operation, and maintenance of drift eliminators in accordance with manufacturer's specifications will help ensure compliance with this standard.

Cooling tower design air flow rate = 1,568,000 scfm
Cooling water recirculation flow rate = 10,200 gpm
Circulating water TDS = 1,400 ppmw
Drift Rate = 0.0005%

PM Emissions = Water Recirculation Rate x Drift Rate x TDS

$$= [(10,200 \text{ gpm} * 0.0005/100 * 1400/10^6) * 8.34 \text{ lb/gal} * 7000 \text{ gr/lb}] / 1568000 \text{ scfm}$$

$$= 2.66 \times 10^{-6} \text{ gr/dscf}$$

(ii) Chapter 127 – Construction, Modification, Reactivation and Operation of Sources

Subchapter B – Plan Approval Requirements – The proposed project is subject to the requirements of 25 Pa. Code Chapter 127 Subchapter B, which establishes Plan Approval requirements.

25 Pa. Code 127.11 – Requires PADEP approval to construct, modify, reactivate, or install an air contamination source. Monroe has submitted a Plan Approval Application in accordance with 25 Pa. Code § 127.12, Content of Applications.

25 Pa. Code § 127.44 - Public Notice. A notice of intent to issue the Plan Approval and to incorporate it into the Title V Operating Permit was published in the PA Bulletin on --/--/----. A notice was also placed in the Delaware County Daily Times newspaper, from --/--/---- through --/--/----.

25 Pa. Code 127.12(a)(5) – Requires that Plan Approval Applications show that the emissions from a new source be the minimum attainable through the use of best available technology (BAT).

The following pollutants were evaluated for the Process Heaters:

NOx –

- (1) Flue Gas Recirculation (FGR) – This technology was determined to be technically infeasible since combustion air is supplied to the process heater by natural draft, and flue gas is not recirculated.
- (2) Low NOx Burners (LNB) – This technology is employed and the process heaters are equipped with Callidus LNBs that are guaranteed not to exceed an emission rate of 0.035 lb/MMBtu on a 30-day rolling average basis.
- (3) Selective Non-Catalytic Reduction (SNCR) – This technology was determined to be technically infeasible due to inadequate temperature and residence time for NOx reduction by ammonia.
- (4) Selective Catalytic Reduction (SCR) – This technology was determined to be technically infeasible since SCR requires a forced draft air flow, however the combustion air is supplied to the process heaters by natural draft.

The facility considers compliance with the Boiler MACT work practice standards (i.e., burner maintenance and annual combustion tuning), the application of LNB and a NOx emission limit of 0.035 lb/MMBtu as BAT for NOx emissions for the two ULSG unit process heaters.

CO – Monroe evaluated the use of a CO catalyst, FGR, proper operation, and good combustion engineering practices, as potential CO control technologies. A CO catalyst and FGR were determined to be technically infeasible. Therefore, BAT for CO is compliance with the Boiler MACT work practice standards (i.e., burner maintenance and annual combustion tuning), proper operation, and good combustion and engineering practices.

VOC – Monroe evaluated the use of a VOC catalyst, FGR, proper operation, and good combustion engineering practices, as potential VOC control technologies. A catalyst and FGR were determined to be technically infeasible. Therefore, BAT for VOC is compliance with the Boiler MACT work practice standards (i.e., burner maintenance and annual combustion tuning), proper operation, and good combustion and engineering practices.

PM – Particulate matter emissions associated with the use of gaseous fuels are primarily a result of incomplete fuel combustion. By carefully controlling the combustion process, PM emissions can be minimized. Therefore, BAT for PM is compliance with the Boiler MACT work practice standards (i.e., burner maintenance and annual combustion tuning), proper operation, and good combustion and engineering practices.

The following pollutants were evaluated for the Cooling Tower:

PM_{2.5} – BAT is the use of a high efficiency drift eliminator with a drift rate of 0.0005% and to operate the cooling tower in accordance with manufacturer's specifications.

VOC – BAT is conducting monthly leak monitoring in accordance with 40 CFR Part 63, Subpart CC, and calculate monthly emissions using the methodology in the guidance developed by the Texas Commission of Environmental Quality (TCEQ), titled *Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources*, Sampling Manual, Appendix P: Cooling Tower Monitoring Guidance.

Subchapter D – Prevention of Significant Deterioration

Pennsylvania has adopted the Federal PSD regulations cited under 40 C.F.R. § 52.21 in their entirety as stated in this subchapter.

Subchapter E – New Source Review

This subchapter contains the PADEP's Non-Attainment New Source Review (NNSR) regulations which have been previously addressed in Section II of this review memo.

Subchapter I – Plan Approval and Operating Permit Fees

25 Pa. Code §127. 702. The plan approval application fee for this project is \$7,000; \$5,300 under Chapter 127 Subchapter E, and \$1,700 under NSPS and NESHAP Chapters 122 and 124.

(iii)Chapter 129 – Standards for Sources

25 Pa. Code § 129.55 – Pumps and compressors handling volatile organic compounds with a vapor pressure of greater than 1.5 psi (10.3 kilopascals) at actual conditions shall have mechanical seals. For the purpose of determining vapor pressure, a temperature no greater than 100°F shall be used. Since the fugitive equipment to be installed as part of the ULSG project will include pumps and compressors handling VOC with a vapor pressure greater than 1.5 psia at actual conditions, the permittee shall comply with this requirement. This requirement has been included in Section C of the plan approval.

25 Pa. Code § 129.58 – This regulation contains standards for monitoring and repairing certain refinery components that have the potential to leak VOC. The ULSG unit and cooling tower are not refinery components as defined in § 121.1. Therefore, these units are not subject to § 129.58. Certain components of the ULSG unit will be subject to the requirements of a PADEP-approved monitoring plan. Compliance with 40 CFR Part 60, Subpart GGGa serves as compliance for § 129.58. The new potential VOC fugitive emissions components will be incorporated in the refinery's existing alternative monitoring plan.

25 Pa. Code § 129.201 – The two process heaters are not subject to the Additional NOx Requirements contained in this section since each process heater is rated less than 100 MMBtu/hr.

IV. Recommendation

I recommend issuance of this Plan Approval to Monroe Energy, LLC for the Ultra-Low Sulfur Gasoline project to be located in Trainer Borough, Delaware County.



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOUTHEAST REGIONAL OFFICE

MEMO

TO James Rebarchak
Regional Manager
Air Quality

FROM Xiaoyin Sun
Engineering Specialist
New Source Review Section
Air Quality

THROUGH James A. Beach, PE
Environmental Engineer Manager
New Source Review Section
Air Quality

DATE August 4, 2015

RE Minor Operating Permit Modification Application Review
RACT SIP Revision
Monroe Energy, LLC
Trainer Borough, Delaware County
Application No. 23-00003
APS ID: 786636, AUTH ID: 1067457

On March 30, 2015, the Department of Environmental Protection (DEP) received a minor Operating Permit (OP) modification application from Monroe Energy, LLC (Monroe). The application is to remove a pressure limit for Tank #160 (Source ID 194) located at Monroe's Trainer Refinery at 4101 Post Road, Trainer Borough, Delaware County.

Change Requested

The change requested in the Title V Operating Permit (TVOP) is Condition #002 for Tank #160 (Source ID 194). Monroe requested to remove the vapor pressure limit of 0.015 psia in the condition, because the true vapor pressure varies with the actual storage conditions (temperature), and can exceed 0.015 psia during hot seasons. Monroe provided the 2014 monthly average vapor pressures and calculated VOC emissions from Tank #160. The emissions from the tank remained below 0.3 tons per year even though the true vapor pressure exceeded 0.015 psia. Table 1 below shows the monthly VOC emissions and average vapor pressure recorded for Tank #160 during 2014:

Table 1 – Monthly VOC Emissions and Average Vapor Pressure (Tank #160)

Month	Actual Vapor Pressure (psia)	VOC Emissions (tons)	VOC Emission Limit (TPY)
January	0.009	0.014	
February	0.008	0.010	
March	0.008	0.013	
April	0.011	0.019	
May	0.014	0.015	
June	0.016	0.019	
July	0.019	0.020	
August	0.017	0.011	
September	0.016	0.019	
October	0.011	0.018	
November	0.008	0.018	
December	0.007	0.020	
Total		0.196	0.3

Permitting History

Plan Approval (PA) and Operating Permit (OP) No. 23-312-180

Tank #160 was constructed and operated beginning in 1992 under Plan Approval (PA) and OP No. 23-312-180. It has a capacity of 85,000 barrels (as originally stated in the PA) and is equipped with an internal floating roof. It stores jet A kerosene with a true vapor pressure of 0.015 psia under normal conditions.

According to the review memo of PA No. 23-312-180:

- Tank #160 is not subject to 25 Pa. Code §129.56, because the vapor pressure of the material stored is less than 1.5 psia under actual storage conditions.
- Tank #160 is not subject to 40 C.F.R. 60 Subpart Kb as per 40 C.F.R. §60.110b(c)*.
- 40 C.F.R. §60.110b(c) is [Reserved] as amended at 65 FR 78275, Dec. 14, 2000; 68 FR 59332, Oct. 15, 2003. Tank #160 is not subject to the provisions of 40 C.F.R. 60 Subpart Kb as per 40 C.F.R. §60.110b(b):

This subpart does not apply to storage vessels with a capacity greater than or equal to 151 m³ storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (0.507 psia)...

PA and OP No. 23-312-180 was issued with the following limitations:

- The volatile organic compound emissions from this tank shall be limited to a maximum of 0.3 tons/yr.

- The storage tank covered under this OP shall be used to store only Jet A kerosene having a maximum true vapor pressure of 0.015 psia (0.105 kPa).

In 1996, the OP was incorporated into Reasonably Available Control Technology (RACT), OP No. 23-0003. According to the RACT review memo: Tank #160 was listed as "Storage tanks with vapor pressures less than or equal to 1.5 psia (10 kPa) are considered de minimis emission sources". Condition 4 of the RACT OP-23-0003 states:

Consolidation of Operating Permits

This Operating Permit applies to emissions of NOx and VOC pollutants only. Emissions of other pollutants, including criteria pollutants, shall be governed by existing Plan Approvals, Operating Permits, and the applicable requirements of the Rules and Regulations of the Department. All conditions from Plan Approval and Operating Permit No. ... 23-312-180 ... shall be incorporated into this permit.

The RACT was SIPped by EPA on June 13, 2006 (Federal Register Vol. 71, No. 113, p.34013).

In 2003, DEP issued a Title V Operating Permit (TVOP) No. 23-00003. The VOC emission and vapor pressure limitations in OP No. 23-312-180 were incorporated and specified in the TVOP for Tank #160 (Source ID 194).

Regulatory Review

1. RACT Revision

Monroe reviewed Federal and State regulations that might apply to Tank #160, and found no regulatory basis for a vapor pressure limit of 0.015 psia (0.72 kPa). However, to assure that the tank is not subject to the provisions of 40 C.F.R. 60 Subpart Kb or 25 Pa. Code §129.56, the maximum true vapor pressure for Tank #160 should be less than 0.5 psia (3.5 kPa). The condition was changed to read as:

To be exempt from the Provisions of both 40 C.F.R. 60 Subparts A and Kb, and 25 Pa. Code §129.56, the storage vessel shall only store volatile organic liquids with a maximum true vapor pressure less than 0.5 psia.

This vapor pressure limit change requires a SIP revision, since the vapor pressure limit of 0.015 psia was SIPped. As shown in Table 1, the change of vapor pressure limit does not change the VOC actual emissions, nor cause any VOC emission increases.

2. Clean Air Act (CAA) Section 110 (k) (6)

Clean Air Act Section 110 (k) (6) provides that whenever the Administrator determines that the Administrator's action of promulgating any plan was in error, the Administrator may in the same manner as the approval revise such action.

DEP will complete the public notice and public hearing requirements for revising a SIP as per Clean Air Act Section 110 (l) and 40 CFR 51.102. DEP anticipates corrections of the vapor pressure from the SIP through publication in the Federal Register.

CAA Section 110(l) requires that any revision to the SIP be adopted by a state after reasonable notice and public hearing. 40 CFR Section 51.102 (a) requires that the public be allowed the opportunity to comment on a revision of a SIP or request a public hearing after a minimum of 30 days' notice. In accordance with 40 CFR Section 51.102(d), the notice of the hearing shall be in a prominent location in the affected area and include the date, time and place of the hearing and advise of the availability of the proposed revision for public inspection.

DEP will make the publication of the proposed revision to the SIP is consistent with the above requirements.

As per 40 C.F.R. §51.104, PADEP is allowed to revise its SIP, consistent with the requirements of 40 CFR Part 51, Subpart NN.

3. 25 Pa. Code §§ 121.1 and 127.11

The proposed changes qualifies as a minor operating permit modification under 25 Pa. Code § 121.1 since it incorporates a "change involving de minimis conditions and other insignificant physical changes to a source or applicable requirements into an existing permit or a change that does not require plan approval but which contravenes an express permit term."

The proposed change does not require a Plan Approval pursuant to 25 Pa. Code Section 127.11, as the change does not involve construction or modification of an air contamination source or the installation of a control device.

4. 25 Pa. Code § 127.462

Monroe met the minor operating permit modification requirements of 25 Pa. Code §127.462(b) in submitting the application and 25 Pa. Code §127.462(b) and (c) by submitting notices to Trainer Borough, Delaware County, the EPA, the states of New Jersey, Delaware and Maryland and publication in the Delaware County Daily Times, a newspaper of general circulation.

5. 25 Pa. Code §§ 127.521(b) and 129.91(h) –Notification and Public Hearing

A notice of public hearing will be published in a local newspaper and PA Bulletin. To be updated.

Other Corrections

The following corrections were made through this minor OP modification:

Source ID 194 – Tank #160 Capacity

According to DEP records, Tank #160 has a capacity of 85 M barrels, instead of 81 M barrels. The capacity for Tank #160 was corrected.

Source ID T003 – MACT Group 2 Tanks

Condition #001: The words of “external floating roof” were removed, since T003 contains both external and internal floating roof tank(s).

The tank capacity for Source ID 194 in Condition #005 was corrected.

Recommendation

To be updated.

Attachments:

- FR Vol. 71, No. 113/Tuesday, June 13, 2006 P. 34013
- Pages 2 - 3 of RACT OP No. OP-23-0003 (Amended on April 29, 2004)
- RACT Review Memo (January 25, 1995)
- Review memo of PA No. 23-312-180 (February 25, 1992)
- OP No. 23-312-180 (May 7, 1992)

COMMONWEALTH OF PENNSYLVANIA
Environmental Resources
January 25, 1995
8-341-6242

SUBJECT: Review Memo
BP Oil Refinery
Application No. CP-23-CC03

TO: Joseph A. Feola
Air Pollution Control Manager

FROM: Praful Patel
Air Pollution Control Engineer *PP*
Air Quality Control

THROUGH: Thomas J. McGinley *TJM*
Chief, Engineering Services
Air Quality Control

This Reasonably Available Control Technology (RACT) application was received on July 15, 1994.

VOC Emission Source Information

All VOC sources at the BP oil Marcus Hook Refinery currently comply with any applicable EPA control technique guidelines (TGS) and/or DER VOC regulations as appropriate (Sections 129.51-129.72 and 129.81 and 129.82). Any VOC sources not addressed in either CTG or DER's VOC regulations is dealt with on a case-by-case basis. Table 1 and Table 2 identifies all of the VOC emission sources and RACT applications.

- 2 -

Table 1

Source	1990 VOC tons/year	Potential VOC tons/year
Marine Ballasting	140	175
Marine Loading	717	915
Separators	121	195
Purging and Sampling/ Blind Changing	305	399
Pipeline Fugitives	419	675
Gasoline Dispensing Facility	0.3	<1.0
Cold Cleaning Degreasers	1.65	1.65
Combustion Units	880	930
Butane Loading Ract	1.6	1.6
Drains	82	90
Cooling	8	12
Storage Tanks	8	107
Fixed Roof		
External Floating Roof	19	49
Internal Floating Roof	11	30
REFINERY TOTAL	2714	3581

Table 2

RACT APPLICATION	EMISSION SOURCE
Pennsylvania Regulations §129.81	Marine Ballasting Marine Loading
§129.55	Wastewater Separators Purging and Sampling/Blind Changing
§129.56-§129.57	Storage Tanks Fixed Roof External Floating Roof Internal Floating Roof
§129.58	Refinery Fugitives
§129.61-§129.62	Gasoline Dispensing Facility (also "de minimus")
Presumptive RACT	Combustion devices (process heaters, boilers catalyst regenerators, diesel pump, stand-by turbines, diesel generators, flares, incinerators).
De Minimus Sources	Butane Railcar Loading Ract (23-312-185) Cold Cleaning Degreasers (4) Twenty-two (22) storage tanks
Case-by-Case	Drains Cooling Towers

VOC RACT

The following VOC emission sources are subject to presumptive RACT.

1. Marine Ballasting - BP Oil contracts for delivery of crude oil, as well as shipment of products. Potential VOC emissions from using non-segregated ballast vessel is 175 TPY, using AP-42 emissions.

In accordance with 25 PA Code §129.81(2), BP Oil contracts with segregated ballast or no-ballast organic liquid cargo vessels to transport raw materials and products. Regulation require a minimum of 40% of the total volume of receipts of crude oil and gasoline to be delivered in vessels that do not ballast, or use segregated ballast.

By 1996, a minimum of 65% of total volume of receipts of crude oil and gasoline must be delivered in vessels that do not ballast, or that use segregated ballast. By 2010, 98% of receipts must not emit VOCs. Presumptive RACT for marine ballasting is compliance with the ballasting schedule in DER regulations.

2. Marine Loading - The refinery transport products by barges. During loading of barges, displaced vapors are emitted to the atmosphere.

The refinery has constructed a marine vapor recovery unit (Plan Approval No. 23-312-196) to comply with 25 PA Code §129.81 on September 28, 1994. The 90% control efficiency specified on 25 PA Code §129.81 constitutes RACT.

3. Wastewater Separators - Wastewater separator (Permit No. 23-312-011) is equipped with a floating cover. A smaller separator, T-10 tank, in the wastewater treatment plant receives less than 200 gallons/day of VOC. The refinery complies with 25 PA Code §129.55 as RACT.
4. Purging and Sampling/Blind Changing - At process unit turnarounds, vessels, reactors, fractionation columns, pipes or vessels are depressured to minimize emissions. Units shutdown, repair, inspection or start-up is performed in a manner to direct the VOC vapors to a fuel gas system, flare or vapor recovery system until the internal pressure in such equipment reaches 19.7 psia. Compliance with these requirements is presumptive RACT.
5. Storage Tanks - Storage tanks greater than 40,000 gallons capacity and containing VOC with a vapor pressure greater than 1.5 psia are designed and equipped with an external or an internal floating roof or vapor recovery system. Compliance with 25 PA Code §129.56 is RACT for the refinery storage tanks containing greater than 2,000 gallons and less than or equal to 40,000 gallons capacity and containing VOC with a vapor pressure greater than 1.5 psia have pressure relief valves and set to release at no less than 0.7 psig of pressure or 0.3 psig of vacuum.

Storage tanks with vapor pressures less than or equal to 1.5 psia or tanks smaller than 2,000 gallons are considered under de-minimus emission sources.
6. Refinery Fugitives - Refinery fugitives include pipeline and pressure relief valves, pump seals, compressor seals and are regulated by 25 PA Code §129.58. The refinery's existing leak detection and repair program minimizes releases of VOC to the atmosphere and complies with DER regulations.

Two new refinery processes have plan approvals for fugitive VOC emissions. The reformate splitter (No. 23-312-192) and marine vapor recovery unit (23-312-196) plan approvals mandate monitoring in accordance with NSPS.
7. Gasoline Dispensing Facility - Annual throughput from the gasoline dispensing facility is less than 20,000 gallons per day, and is, therefore, exempt from 25 PA Code §129.59-60 requirements for bulk gasoline plants. The facility complies with §129.61 (Stage I) requirements.
8. Combustion Sources - VOC emissions from combustion sources are minimized by methods achieving NOx RACT through control technology as

appropriate, and efficient operations in accordance with manufacturers specifications.

B. De-Minimis Emission Sources

1. Cold Cleaning Degreaser - Four (4) Cold cleaning degreasers whose opening are less than 10 ft² and are therefore, below the minimum size identified for application of 25 PA Code §129.63 standards. Combined emissions from all degreasers are estimated at 1.65 TPY, (based on AP-42 factors), making this source category below de-minimis threshold.
2. Butane Loading Rack - The loading rack (Permit No. 23-312-185) is permitted to load 200 railcars per year, with an emission limit of 1.6 TPY. Compliance with permit limit results in this facility meeting the requirements of de-minimis source for RACT determination. The loading facility is monitored as part of the refinery's leak detection and repair (LDAR) program.
3. Storage Tanks - Twenty two (22) tanks capacities ranged from 300 gallons to 22,000 gallons and have combined VOC emission of 239 pounds/year. Since the emissions are less than de-minimis threshold (3 pounds/hr, 15 pounds/day or 2.7 tons/year).

C. Case-By-Case RACT Analysis

Two sources are subject to a VOC case-by-case RACT analysis

1. Drains - Refinery VOC emissions from drains are estimated at 82 TPY using AP-42 factors. Applicable control technologies to minimize VOC emissions from sewers include replacing or sealing drains, and sealing junction bores to meet NSPS, subpart QQQ. The refinery initiated a program to install segregated sewers in certain portions of the tank farm. To evaluate drain replacement on a unit basis and refinery-wide, retrofit costs is very high. Individual drain replacement exceeds \$4,100 cost-effectiveness, excluding engineering cost and piping modifications. Consequently, no action is proposed at this time. VOC removal cost is \$9,700/ton.
2. Cooling Towers - Refinery cooling towers are used for non-contact cooling of process operations. Using AP-42 emission factors, potential cooling tower VOC emissions total approximately 12 TPY.

Applicable control technologies to minimize VOC emission from cooling towers, identified in AP-42, Section 9.1-3.5 and table 9.1-2, include proper maintenance of cooling system and monitoring of cooling water.

Refinery cooling towers are checked daily for the presence of foam, oil or other visible indication of leakage. In addition, the refinery monitors chemical consumption (additives) to identify potential problems. This maintenance program at the refinery constitutes RACT.

Recommendation

It is recommended that an operating permit be issued to BP Oil for application OP-23-0003.

Re 30 (KAL) 321.4/.2

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
FIELD OPERATIONS - BUREAU OF AIR QUALITY

OPERATING PERMIT

REVISED 4/23/04

In accordance with provisions of the Air Pollution Control Act, the act of January 8, 1960, P.L. 2119, as amended, and after due consideration of an application received under Chapter 127 of the Rules and Regulations of the Department of Environmental Protection, the Department hereby issues this permit for the operation of the air contamination source(s) described below:

Permit No.	OP-23-0003	Source(s)	NO _x and VOC Emitting Facility
Owner	Conoco Phillips Company	Air	As Described Herein
Address	4101 Post Road	Cleaning	
	Trainer, PA 19061	Device	
Attention	Mr. Ken Kerntke	Location	Post Road and Smith Street
	HSE Manager		Trainer and Marcus Hook Boroughs
			Delaware County

This permit is subject to the following conditions:

1. That the source(s) and any associated air cleaning devices are to be:
 - a. operated in such a manner as not to cause air pollution;
 - b. in compliance with the specifications and conditions of all applicable Plan Approvals issued;
 - c. operated and maintained in a manner consistent with good operating and maintenance practices.
2. This permit is valid only for the specific equipment, location and owner named above.

(SEE ADDITIONAL CONDITIONS ATTACHED)

Failure to comply with the conditions placed on this permit is a violation of Section 127.444. Violation of this or any other provision of Article III of the Rules and Regulations of the Department of Environmental Protection will result in suspension or revocation of this permit and/or prosecution under Section 9 of the Air Pollution Control Act.

Issued 02/16/1996

Francine Carlini
Francine Carlini
Regional Manager
Air Quality

Expires 02/16/2001

cc: Division of Permits, RCSOB
Administration
SEFO
Re (RN04)55-14

OPERATING PERMIT CONDITIONS
PERMIT NO. OP-23-0003
CONOCO PHILLIPS COMPANY

REVISED 4/23/04

CONDITIONS (continued):

3. General Requirements

- A. This Operating Permit, OP-23-0003 is issued to Tosco Corporation for the operation of oxides of nitrogen (NO_x) and volatile organic compounds (VOCs) emission sources regulated under 25 Pa. Code Sections 129.91 - 129.95. This Operating Permit, OP-23-0003 also specifies Reasonably Available Control Technology (RACT) requirements for sources of VOCs and NO_x. Other pollutants are regulated under the applicable provisions of Title 25 of the Pennsylvania Code and by existing permit conditions, which are incorporated herein.
- B. The expiration date shown on the Operating Permit, OP-23-0003, is for state purposes only. For Federal enforcement purposes, this Operating Permit shall remain in effect as part of the Pennsylvania State Implementation Plan (SIP) until repealed pursuant to 40 C.F.R. Part 51 and approved by the United States Environmental Protection Agency (EPA).
- C. The company shall not impose conditions upon or otherwise restrict the Department's access to the aforementioned source(s) and/or any associated air cleaning device(s) and shall allow the Department to have access at any time to said source(s) and associated air cleaning device(s) with such measuring and recording equipment, including equipment recording visual observations, as the Department deems necessary and proper for performing its duties and for the effective enforcement of the Air Pollution Control Act.
- D. If, at any time, the Department has cause to believe that air contaminant emissions from the aforementioned source(s) may be in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection, the company shall be required to conduct whatever tests are deemed necessary by the Department to determine the actual emission rate(s). Such testing shall be conducted in accordance with the provisions of Chapter 139 of the Rules and Regulations of the Department of Environmental Protection, where applicable, and in accordance with any restrictions or limitations established by the Department at such time as it notifies the company that testing is required.

4. Consolidation of Operating Permits

This Operating Permit applies to the emissions of NO_x and VOC pollutants only. Emissions of other pollutants, including criteria pollutants, shall be governed by existing Plan Approvals, Operating Permits, and the applicable requirements of the Rules and Regulations of the Department. All conditions from Plan Approval and Operating Permit

this was not SUPPLD

OPERATING PERMIT CONDITIONS
PERMIT NO. OP-23-0003
CONOCO PHILLIPS COMPANY

CONDITIONS (continued):

Nos. 23-312-004, 23-312-005, 23-312-006, 23-312-007, 23-312-009, 23-312-011, 23-312-014, 23-312-015, 23-312-016, 23-312-031, 23-312-121, 23-312-173, 23-312-178, 23-312-180, 23-312-185A, 23-312-193A, 23-312-196, 23-312-017, and 23-328-001 shall be incorporated into this permit.

where is the tank and burner?

5. RACT Implementation and Source Specific Conditions:

A. The following conditions apply only to the Platformer Heater:

- i. This permit does not restrict the hours of operation of the Platformer Heater.
- ii. RACT for the Platformer Heater shall be the operation and maintenance of one hundred eight (108) low NO_x burners.
- iii. The following air contaminant emission limit, on a 24-hour basis, is approved for this source.
 - (1) Oxides of Nitrogen (NO_x): 0.2 lb/MMBtu, when firing refinery fuel gas.
- iv. The following data shall be recorded and kept for a minimum of five (5) years and shall be made available to the Department upon request:
 - (1) The amount of fuel combusted shall be recorded by methods approved by the Department.
 - (2) The heating value of the fuel shall be determined by Department approved methods, which can include gas chromatography (GC) or calorimeter.
- v. An annual tune-up on the combustion process shall be performed for the Platformer Heater. The annual tune-up shall include, but not limited to, the following:
 1. Inspection, adjustment, cleaning or replacement of fuel burning equipment, including the burners and moving parts necessary for proper operation as specified by the manufacturer.
 2. Inspection of the flame pattern or characteristics and adjustments necessary to minimize total emissions of NO_x, and to the extent practicable, minimize the emissions of CO.

COMMONWEALTH OF PENNSYLVANIA
Environmental Resources
February 25, 1992
8-341-6241

SUBJECT: Review Memo
BP Oil
Application No. 23-312-130

TO: THOMAS J. MCGINLEY
Chief, Engineering Services

FROM: JOHN A. PETRELLA *JP*
Air Pollution Control Engineer

This application was received on August 19, 1991 for the construction of an internal floating roof storage tank in Marcus Hook, Delaware County. The tank has a capacity of 85,000 barrels and will be used to store jet kerosene. This tank will replace a fixed roof tank that has already been dismantled but the company does not want to apply for any offset credits.

The new floating roof will be equipped with a primary seal, a closure seal, and covers for openings (other than stub drains) that will be closed at all times. The vapor pressure of the kerosene is 0.015 psia. Because of this the source does not have to comply with Chapter 129, paragraph 129.56 for storage tanks greater than 40,000 gallons of the regulations of the Department. This regulation only applies to the storage of volatile organic compounds having a vapor pressure greater than 1.5 psia. In my opinion, this source is also exempt from Subpart Kb - Standards of Performance for Storage Vessels which were constructed after July 23, 1984 because the kerosene vapor pressure is less than 3.5 kPa, as required by this section (paragraph 60.110b(c)) *and 60.116b(a) and (b)*

The VOC emissions were calculated using a computer program from Central Office, which came to 0.3 tons/yr. I looked at the previous Plan Approvals for this company and I found a total permitted allowable VOC emission of ~~20.5~~ tons/yr for plan approvals issued after 1979. Because of the allowable permitted emissions are less than 50 tons/yr, in my opinion no offsets are required. *22:4*

I recommend this application for approval. The Act 4 notes were received.

Re 30 (4)55.19

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
FIELD OPERATIONS - AIR QUALITY CONTROL

NSPS

PLAN APPROVAL

Application No. 23-312-180 Source(s) Storage Tank No. 160
Owner BP Oil Company Air Internal Floating Roof
Address P.O. Box 428 Cleaning _____
Marcus Hook, PA 19061-0028 Device _____
Attention Mr. Felix R. Strater Location Post Road
Refinery Manager Trainer Borough
Delaware County

In accordance with provisions of the Air Pollution Control Act, the Act of January 8, 1960, P.L. 2119, as amended, and with Chapter 127 of the rules and regulations of the Department of Environmental Resources, the Department on May 7, 1992 approved plans for the construction of the above indicated air contamination source(s).

This PLAN APPROVAL expires 04/30/93.

The plan approved is subject to the following conditions:

1. The source is constructed in accordance with the plans submitted with the application (as approved herein).

(SEE THE ATTACHED ADDITIONAL CONDITIONS)

Notify the person noted below when the installation is completed so that the source(s) can be inspected for issuance of an OPERATING PERMIT.

NOTE:

Field Operations - Air Quality Control
Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428
(215)832-6241

N. Rao Kona
N. RAO KONA
Regional Air Pollution Control Engineer

cc: Abatement and Compliance (Executive House)
Assistant Director
Southeast Regional Office

Plan Approval Conditions
Application No. 23-312-180
BP Oil Company

Conditions (continued):

2. The source covered under this Plan Approval is a storage tank having a capacity of 85,000 barrels (13,552 m³).
3. The storage tank covered under this Plan Approval shall be used to store only Jet A kerosene having a maximum true vapor pressure of 0.015 psia (0.105 kilopascals).
4. This source is subject to Subpart Kb of the Standards of Performance for New Stationary Sources and shall comply with all applicable requirements of this Subpart. 40 CFR § 60.4 requires submission of copies of all requests, reports, applications, submittals, and other communications to both EPA and the Department. The EPA copies shall be forwarded to:

Director
Air, Toxics and Radiation Division
US EPA, Region III
841 Chestnut Street
Philadelphia, PA 19107

5. The volatile organic compound emissions from this tank shall be limited to a maximum of 0.3 tons/yr. The total permitted allowable volatile organic emissions for all sources issued a Plan Approval on or after July 1, 1979 is 22.4 tons. *Not a total*
6. If at any time the Department has cause to believe that air contaminant emissions from the aforementioned source(s) may be in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Resources, the company shall be required to conduct whatever tests are deemed necessary by the Department to determine the actual emission rate(s). Such testing shall be conducted in accordance with the provisions of Chapter 139 of the Rules and Regulations of the Department of Environmental Resources, where applicable, and in accordance with any restrictions or limitations established by the Department at such time as it notifies the company that testing is required.
7. The company shall not impose conditions upon or otherwise restrict the Department's access to the aforementioned source(s) and/or any associated air cleaning device(s) and shall allow the Department to have access at any time to said source(s) and associated air cleaning device(s) with such measuring and recording equipment, including equipment recording visual observations, as the Department deems necessary and proper for performing its duties and for the effective enforcement of the Air Pollution Control Act.
8. This is not an operating permit. Prior to start-up of the facility a temporary operating permit must be obtained pursuant to 25 PA Code §127.23. The request must be in writing and should use the attached form. The request must be received at least two weeks prior to completion/modification.

Plan Approval Conditions
Application No. 23-312-180
BP Oil Company

Conditions (continued):

The source may not be operated without a valid operating permit. Operation without appropriate permit from the Department may be subject to enforcement action.

9. If a regular operating permit has not been issued, this temporary operating permit may be extended pursuant to 25 PA Code §127.23(b). Requests for such extensions must be in writing and must be accompanied by a permit fee in the amount of \$200.00 (two hundred dollars) payable to the "Clean Air Fund" pursuant to 25 PA Code §127.34. The request should be made on the attached form and must be received by the Department no later than February 28, 1993.

The source may not be operated without a valid operating permit. Operation without appropriate permit from the Department may be subject to enforcement action.

(23-2)

1.332-6, 1.351-3, 1.355-5, 1.368-3, and 1.1081-11.

Cynthia E. Grigsby,

Senior Federal Register Liaison Officer,
Publications and Regulations Branch,
Associate Chief Counsel, (Procedure and
Administration).

[FR Doc. 06-5349 Filed 6-8-06; 3:47 pm]

BILLING CODE 4830-01-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R03-OAR-2006-0473; FRL-8182-5]

Approval and Promulgation of Air Quality Implementation Plans; Pennsylvania; VOC and NO_x RACT Determinations for Eight Individual Sources

AGENCY: Environmental Protection
Agency (EPA).

ACTION: Direct final rule.

SUMMARY: EPA is taking direct final action to approve revisions to the Commonwealth of Pennsylvania's State Implementation Plan (SIP). The revisions were submitted by the Pennsylvania Department of Environmental Protection (PADEP) to establish and require reasonably available control technology (RACT) for eight major sources of volatile organic compounds (VOC) and nitrogen oxides (NO_x). These sources are located in Pennsylvania. EPA is approving these revisions to establish RACT requirements in the SIP in accordance with the Clean Air Act (CAA).

DATES: This rule is effective on July 28, 2006 without further notice, unless EPA receives adverse written comment by July 13, 2006. If EPA receives such comments, it will publish a timely withdrawal of the direct final rule in the *Federal Register* and inform the public that the rule will not take effect.

ADDRESSES: Submit your comments, identified by Docket ID Number EPA-R03-OAR-2006-0473 by one of the following methods:

A. <http://www.regulations.gov>. Follow the on-line instructions for submitting comments.

B. E-mail: morris.makeba@epa.gov.

C. Mail: EPA-R03-OAR-2006-0473, Makeba Morris, Chief, Air Quality Planning Branch, Mailcode 3AP21, U.S. Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, Pennsylvania 19103.

D. Hand Delivery: At the previously-listed EPA Region III address. Such deliveries are only accepted during the

Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. EPA-R03-OAR-2006-0473. EPA's policy is that all comments received will be included in the public docket without change, and may be made available online at <http://www.regulations.gov>, including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through <http://www.regulations.gov> or e-mail. The <http://www.regulations.gov> Web site is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through <http://www.regulations.gov>, your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses.

Docket: All documents in the electronic docket are listed in the <http://www.regulations.gov> index. Although listed in the index, some information is not publicly available, i.e., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically in <http://www.regulations.gov> or in hard copy during normal business hours at the Air Protection Division, U.S. Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, Pennsylvania 19103. Copies of the State submittal are available at the Pennsylvania Department of Environmental Protection, Bureau of Air Quality, P.O. Box 8468, 400 Market Street, Harrisburg, Pennsylvania 17105.

FOR FURTHER INFORMATION CONTACT: Rose Quinto, (215) 814-2182, or by e-mail at quinto.rose@epa.gov.

SUPPLEMENTARY INFORMATION:

I. Background

Pursuant to sections 182(b)(2) and 182(f) of the CAA, the Commonwealth of Pennsylvania (the Commonwealth or Pennsylvania) is required to establish and implement RACT for all major VOC and NO_x sources. The major source size is determined by its location, the classification of that area and whether it is located in the ozone transport region (OTR). Under section 184 of the CAA, RACT as specified in sections 182(b)(2) and 182(f) applies throughout the OTR. The entire Commonwealth is located within the OTR. Therefore, RACT is applicable statewide in Pennsylvania.

State implementation plan revisions imposing RACT for three classes of VOC sources are required under section 182(b)(2). The categories are:

(1) All sources covered by a Control Technique Guideline (CTG) document issued between November 15, 1990 and the date of attainment;

(2) All sources covered by a CTG issued prior to November 15, 1990; and

(3) All major non-CTG sources.

The Pennsylvania SIP already has approved RACT regulations and requirements for all sources and source categories covered by the CTGs. The Pennsylvania SIP also has approved regulations to require major sources of NO_x and additional major sources of VOC emissions (not covered by a CTG) to implement RACT. These regulations are commonly termed the "generic RACT regulations". A generic RACT regulation is one that does not, itself, specifically define RACT for a source or source categories but instead establishes procedures for imposing case-by-case RACT determinations. The Commonwealth's SIP-approved generic RACT regulations consist of the procedures PADEP uses to establish and impose RACT for subject sources of VOC and NO_x. Pursuant to the SIP-approved generic RACT rules, PADEP imposes RACT on each subject source in an enforceable document, usually a Plan Approval (PA) or Operating Permit (OP). The Commonwealth then submits these PAs and OPs to EPA for approval as source-specific SIP revisions. EPA reviews these SIP revisions to ensure that the PADEP has determined and imposed RACT in accordance with the provisions of the SIP-approved generic RACT rules.

It must be noted that the Commonwealth has adopted and is implementing additional "post RACT requirements" to reduce seasonal NO_x

emissions in the form of a NO_x cap and trade regulation, 25 Pa Code Chapters 121 and 123, based upon a model rule developed by the States in the OTR. That regulation was approved as SIP revision on June 6, 2000 (65 FR 35842). Pennsylvania has also adopted 25 Pa Code Chapter 145 to satisfy Phase I of the NO_x SIP call. That regulation was approved as a SIP revision on August 21, 2001 (66 FR 43795). Federal approval of a source-specific RACT determination for a major source of NO_x in no way relieves that source from any applicable requirements found in 25 Pa Code Chapters 121, 123 and 145.

On May 8, 2006, PADEP submitted revisions to the Pennsylvania SIP which

establish and impose RACT for eight sources of VOC and/or NO_x. The Commonwealth's submittals consist of PAs and OPs which impose VOC and/or NO_x RACT requirements for each source.

II. Summary of the SIP Revisions

Copies of Pennsylvania's entire SIP submittal, including the actual PAs and OPs imposing RACT, PADEP's evaluation memoranda and the sources' RACT proposal are included in the electronic and hard copy docket for this final rule. As previously stated, all documents in the electronic docket are listed in the <http://www.regulations.gov> index. Publicly available docket

materials are available either electronically at <http://www.regulations.gov> or in hard copy during normal business hours at the Air Protection Division, U.S. Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, Pennsylvania 19103. Copies of the State submittal are available at the Pennsylvania Department of Environmental Protection, Bureau of Air Quality, P.O. Box 8468, 400 Market Street, Harrisburg, Pennsylvania 17105.

The table below identifies the sources and the individual plan approvals (PAs) and operating permits (OPs) which are the subject of this rulemaking.

PENNSYLVANIA—VOC AND NO_x RACT DETERMINATIONS FOR INDIVIDUAL SOURCES

Source	County	Plan approval (PA#) operating permit (OP#)	Source type	"Major source" pollutant
Big Bee Steel and Tank Company	Lancaster	36-2024	Surface coating operations	VOC.
Conoco Phillips Company	Delaware	OP-23-0003	Refinery	VOC & NO _x .
The Hershey Company, East Plant	Dauphin	22-02004B	Chocolate manufacturing operations.	VOC.
LORD Corporation, Cambridge Springs	Crawford	OP-20-123	Industrial products operations.	VOC.
Pittsburgh Corning Corporation	McKean	PA-42-009	Container glass production	VOC & NO _x .
Small Tube Manufacturing, LLC	Blair	07-12010	Copper and brass tubing production.	VOC.
Texas Eastern Transmission Corporation, Holbrook Compressor Station.	Greene	30-000-077	Internal combustion engines.	NO _x .
Willamette Industries, Johnsonburgh Mill	Elk	OP-24-009	Kraft pulp and paper	VOC & NO _x .

EPA is approving these RACT SIP submittals because PADEP established and imposed these RACT requirements in accordance with the criteria set forth in its SIP-approved generic RACT regulations applicable to these sources. In accordance with its SIP-approved generic RACT rule, the Commonwealth has also imposed record-keeping, monitoring, and testing requirements on these sources sufficient to determine compliance with the applicable RACT determinations.

III. Final Action

EPA is approving the revisions to the Pennsylvania SIP submitted by PADEP to establish and require VOC and NO_x RACT for eight major sources. EPA is publishing this rule without prior proposal because the Agency views this as a noncontroversial amendment and anticipates no adverse comment. However, in the "Proposed Rules" section of today's *Federal Register*, EPA is publishing a separate document that will serve as the proposal to approve the SIP revision if adverse comments are filed. This rule will be effective on July 28, 2006 without further notice unless

EPA receives adverse comment by July 13, 2006. If EPA receives adverse comment, EPA will publish a timely withdrawal in the *Federal Register* informing the public that the rule will not take effect. EPA will address all public comments in a subsequent final rule based on the proposed rule. EPA will not institute a second comment period on this action. Any parties interested in commenting must do so at this time. Please note that if EPA receives adverse comment on an amendment, paragraph, or section of this rule and if that provision may be severed from the remainder of the rule, EPA may adopt as final those provisions of the rule that are not the subject of an adverse comment.

IV. Statutory and Executive Order Reviews

A. General Requirements

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is not a "significant regulatory action" and therefore is not subject to review by the Office of Management and Budget. For this reason, this action is also not subject to Executive Order 13211,

"Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use" (66 FR 28355, May 22, 2001). This action merely approves state law as meeting Federal requirements and imposes no additional requirements beyond those imposed by state law. Accordingly, the Administrator certifies that this rule will not have a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*). Because this rule approves pre-existing requirements under state law and does not impose any additional enforceable duty beyond that required by state law, it does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4). This rule also does not have tribal implications because it will not have a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes, as

specified by Executive Order 13175 (65 FR 67249, November 9, 2000). This action also does not have Federalism implications because it does not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132 (64 FR 43255, August 10, 1999). This action merely approves a state rule implementing a Federal standard, and does not alter the relationship or the distribution of power and responsibilities established in the Clean Air Act. This rule also is not subject to Executive Order 13045 "Protection of Children from Environmental Health Risks and Safety Risks" (62 FR 19885, April 23, 1997), because it is not economically significant.

In reviewing SIP submissions, EPA's role is to approve state choices, provided that they meet the criteria of the Clean Air Act. In this context, in the absence of a prior existing requirement for the State to use voluntary consensus standards (VCS), EPA has no authority to disapprove a SIP submission for failure to use VCS. It would thus be inconsistent with applicable law for EPA, when it reviews a SIP submission, to use VCS in place of a SIP submission that otherwise satisfies the provisions of the Clean Air Act. Thus, the requirements of section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) do not apply. This rule does not impose an information collection burden under the provisions of the

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*).

B. Submission to Congress and the Comptroller General

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. Section 804 exempts from section 801 the following types of rules: (1) Rules of particular applicability; (2) rules relating to agency management or personnel; and (3) rules of agency organization, procedure, or practice that do not substantially affect the rights or obligations of non-agency parties. 5 U.S.C. 804(3). EPA is not required to submit a rule report regarding today's action under section 801 because this is a rule of particular applicability establishing source-specific requirements for eight named sources.

C. Petitions for Judicial Review

Under section 307(b)(1) of the Clean Air Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by August 14, 2006. Filing a petition for reconsideration by the Administrator of this final rule approving source-specific RACT requirements for eight sources in the Commonwealth of Pennsylvania does not affect the finality of this rule for the purposes of judicial review nor does it

extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. (See section 307(b) (2).)

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Nitrogen dioxide, Ozone, Reporting and recordkeeping requirements, Volatile organic compounds.

Dated: June 1, 2006.

Donald S. Welsh,
Regional Administrator, Region III.

■ 40 CFR part 52 is amended as follows:

PART 52—[AMENDED]

■ 1. The authority citation for part 52 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

Subpart NN—Pennsylvania

■ 2. In § 52.2020, the table in paragraph (d)(1) is amended by adding the entries for Bigbee Steel and Tank Company; Conoco Phillips Company; The Hershey Company; LORD Corporation; Pittsburgh Corning Corporation; Small Tube Manufacturing, LLC; Texas Eastern Transmission Corporation; and Willamette Industries, at the end of the table to read as follows:

§ 52.2020 Identification of plan.

*	*	*	*	*
(d)	*	*	*	*
(1)	*	*	*	*

Name of source	Permit number	County	State effective date	EPA approval date	Additional explanation/ § 52.2063 citation
Bigbee Steel and Tank Company.	36-2024	Lancaster	7/7/95	6/13/06 [Insert page number where the document begins].	52.2020(d)(1)(p)
Conoco Phillips Company	OP-23-0003	Delaware	4/29/04	6/13/06 [Insert page number where the document begins].	52.2020(d)(1)(p)
The Hershey Company	22-02004B	Dauphin	12/23/05	6/13/06 [Insert page number where the document begins].	52.2020(d)(1)(p)
LORD Corporation, Cambridge Springs.	OP-20-123 ...	Crawford	7/27/95	6/13/06 [Insert page number where the document begins].	52.2020(d)(1)(p)
Pittsburgh Corning Corporation.	PA-42-009 ...	McKean	5/31/95	6/13/06 [Insert page number where the document begins].	52.2020(d)(1)(p)
Small Tube Manufacturing, LLC.	07-02010	Blair	2/27/06	6/13/06 [Insert page number where the document begins].	52.2020(d)(1)(p)
Texas Eastern Transmission Corporation, Holbrook Compressor Station.	30-000-077 ..	Greene	1/3/97	6/13/06 [Insert page number where the document begins].	52.2020(d)(1)(p)

